INSTALLATION/OPERATION & TECHNICAL MANUAL

FOR JACKSON MODELS:

AJ-64CE	**AJ-86CE**	**AJ-100CE**
AJ-64CS	**AJ-86CGP**	**AJ-100 CGP**
AJ-64CGP	**AJ-86CS**	

AND ASSOCIATED OPTION PACKAGES INCLUDING:

SIDE LOADER
D226 EXTERNAL STEAM BOOSTER

Jackson®
Warewashing Systems

Jackson WWS ,INC.
P.O. Box 1060
Barbourville, KY. 40906
(606) 523-9795
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www.jacksonwws.com

October 06, 2015
P/N 7610-002-30-93 (Revision K)

MANUFACTURERS WARRANTY

ONE YEAR LIMITED PARTS & LABOR WARRANTY

ALL NEW JACKSON DISHWASHERS ARE WARRANTED TO THE ORIGINAL PURCHASER TO BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP, UNDER NORMAL USE AND OPERATION FOR A PERIOD OF (1) ONE YEAR FROM THE DATE OF PURCHASE, BUT IN NO EVENT TO EXCEED (18) EIGHTEEN MONTHS FROM THE DATE OF SHIPMENT FROM THE FACTORY.

Jackson WWS agrees under this warranty to repair or replace , at its discretion, any original part which fails under normal use due to faulty material or workmanship during the warranty period, providing the equipment has been unaltered, and has been properly installed, maintained and operated in accordance with the applicable factory instruction manual furnished with the machine and the failure is reported to the authorized service agency within the warranty period. This includes the use of factory specified genuine replacement parts, purchased directly from a Jackson authorized parts distributor or service agency. Use of generic replacement parts may create a hazard and void warranty certification.

The labor to repair or replace such failed part will be paid by Jackson WWS, within the continental United States, Hawaii and Canada, during the warranty period provided a Jackson WWS authorized service agency, or those having prior authorization from the factory, performs the service. Any repair work by persons other than a Jackson WWS authorized service agency is the sole responsibility of the customer. Labor coverage is limited to regular hourly rates, overtime premiums and emergency service charges will not be paid by Jackson WWS.

Accessory components not installed by the factory carry a (1) one year parts warranty only. Accessory components such as table limit switches, pressure regulators, pre rinse units, etc. that are shipped with the unit and installed at the site are included. Labor to repair or replace these components is not covered by Jackson WWS.

This warranty is void if failure is a direct result from shipping, handling, fire, water, accident, misuse, acts of god, attempted repair by unauthorized persons, improper installation, if serial number has been removed or altered, or if unit is used for purpose other than it was originally intended.

TRAVEL LIMITATIONS

Jackson WWS limits warranty travel time to (2) two hours and mileage to (100) one hundred miles. Jackson WWS will not pay for travel time and mileage that exceeds this, or any fees such as those for air or boat travel without prior authorization.

WARRANTY REGISTRATION CARD

The warranty registration card supplied with the machine must be returned to Jackson WWS within 30 days to validate the warranty.

REPLACEMENT PARTS WARRANTY

Jackson replacement parts are warranted for a period of 90 days from the date of installation or 180 days from the date of shipment from the factory, which ever occurs first.

PRODUCT CHANGES AND UPDATES

Jackson WWS reserves the right to make changes in design and specification of any equipment as engineering or necessity requires.

THIS IS THE ENTIRE AND ONLY WARRANTY OF JACKSON WWS. JACKSON'S LIABILITY ON ANY CLAIM OF ANY KIND, INCLUDING NEGLIGENCE, WITH RESPECT TO THE GOODS OR SERVICES COVERED HEREUNDER, SHALL IN NO CASE EXCEED THE PRICE OF THE GOODS OR SERVICES OR PART THEREOF WHICH GIVES RISE TO THE CLAIM.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING FOR FITNESS OR MERCHANTABILITY, THAT ARE NOT SET FORTH HEREIN, OR THAT EXTEND BEYOND THE DURATION HEREOF. UNDER NO CIRCUMSTANCES WILL JACKSON WWS BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, OR FOR THE DAMAGES IN THE NATURE OF PENALTIES, ARISING OUT OF THE USE OR INABILITY TO USE ANY OF ITS PRODUCTS.

ITEMS NOT COVERED

This warranty does not cover cleaning or deliming of the unit or any component such as, but not limited to, wash arms, rinse arms or strainers at anytime. Nor does it cover adjustments such as, but not limited to timer cams, thermostats or doors, beyond 30 days from the date of installation. In addition, the warranty will only cover the replacement of wear items such as curtains, drain balls, door guides or gaskets during the first 30 days after installation. Also, not covered are conditions caused by the use of incorrect (non-Commercial) grade detergents, incorrect water temperature or pressure, or hard water conditions.

CALL 1-888-800-5672 TO REGISTER THIS PRODUCT!
FAILURE TO DO SO WILL VOID THE WARRANTY!

LLAME AL 1-888-800-5672 PARA REGISTRAR ESTE PRODUCTO !
AL NO HACERLO LA GARANTIA SERA ANULADA!

S.V.P. APPELER 1-888-800-5672 POUR ENREGISTRER CE PRODUIT,
LA GARANTIE SERA ANNULEE POUR TOUT PRODUIT NON-ENREGISTREE

REVISION	REVISION DATE	MADE BY	APPLICABLE ECN	DETAILS
D	04-06-05	MAW	6999, 7193 7217, 7064 7212, 7259 6685, 7096 6964, 7006	Updated drawings for limit switch actuators. Changed AJ-86 drain plumbing copper lengths. Added rack rail stabilizer kit. Replaced heater 04540-121-76-93 with 04540-002-29-82. Updated installation instructions. Added 3 instruction sheets for limit switches. Added instruction sheet for curtains. Added AJ-86CGP & AJ-100CGP models.
E	02-02-06	MAW	7600,7558	Added gas exhaust fan schematic, updated electric exhaust fan schematic, updated dimensions pages. Replace Drain Weldment 05700-021-68-28 with 05700-002-51-12.
F	05-02-06	MAW	7572, 7730 7634, 7743 7428, 7571 7554, 7475 7463, 7462 7367, 7789	Pawl bar for AJ-86 R-L unit with a side loader option. Updated scrap basket drawings. Vent cowl assembly for a hooded side loader. Service instructions for replacing wash/rinse motors. Added prison pawl bar packages. Thermostat replacement kits, updated drain quench assembly, replaced wash thermostat 05930-121-67-72 with 05930-003-13-65. Heater replacment instructions. Updated steam booster schematic. Rinse fill motor assembly. Wash, rinse & PSI decals. Update door assembly numbers.Drain quench kit.
PG, 116	04-19-07	MAW	7898	Added 09905-003-32-20 fan load decal.
5 thru 22, 104	09-29-2007	MAW	N/A	Updated dimensions page. Removed alternate table limit switches.
G	10-09-2009	KJS	8044	Changed the part from a weldment (05700-021-67-50) to a casting (09515-003-58-12).
H	08-12-2013	RLC	QOF NDB-219	Updated Manufacturer information.
I	09-15-2014	KAP	N/A	Updated Jackson Logo
J	02-06-2014	KAP	N/A	Updated temperatures on pg's 7, 8, 13, 14, 19, and 20. Updated drawing on pg. 39
K	10-06-2015	KAP	N/A	Updated rack rail assembly on pg. 97

NOMENCLATURE FOR THE MODELS COVERED IN THIS MANUAL

AJ-64CS

AJ = AJ series of rack conveyors

64 = 64” wide machine
86 = 86” wide machine
100 = 100” wide machine

CE = Electrically heated, hot water sanitizing machine
CS = Steam heated, hot water sanitizing machine
CGP = Gas heated, hot water sanitizing machine

Model:_____

Serial No.:_____

Installation Date:_____

Service Rep. Name:_____

Phone No.:_____

Jackson WWS ,INC. provides technical support for all of the dishmachines detailed in this manual. We strongly recommend that you refer to this manual before making a call to our technical support staff. Please have this manual with you when you call so that our staff can refer you, if necessary, to the proper page. Technical support is available from 8:00 a.m. to 5:00 p.m. (EST), Monday through Friday. Technical support is not available on holidays. Contact technical support toll free at 1-888-800-5672. Please remember that technical support is available for service personnel only.

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SECTION 1:
SPECIFICATION INFORMATION

SECTION 1: SPECIFICATION INFORMATION

OPERATING CHARACTERISTICS

RACKS PER HOUR:

AJ-64-86-100CE/CS/CGP	287

DISHES OR GLASSES PER HOUR:

AJ-64-86-100CE/CS/CGP	7200

PREWASH TANK CAPACITY (GALLONS):

AJ-86CE/CS/CGP	16
AJ-100CE/CS/CGP	16

WASH TANK CAPACITY (GALLONS):

AJ-64-86-100CE/CS/CGP	15.4

POWER RINSE TANK CAPACITY (GALLONS):

AJ-86CE/CS/CGP	15.4
AJ-100CE/CS/CGP	15.4

PREWASH PUMP CAPACITY (GPM):

AJ-86CE/CS/CGP	120
AJ-100CE/CS/CGP	270

WASH PUMP CAPACITY

GALLONS PER MINUTE (ALL MODELS):	270

POWER RINSE PUMP CAPACITY

GALLONS PER MINUTE (ALL MODELS):	270

VENTING REQUIREMENTS (CFM)(100% CAP.):

INPUT END	200
OUTPUT END	400
TOTAL	600

CONVEYOR SPEED (FPM):

AJ-64-86-100CE/CS/CGP MACHINES	8.0

GALLONS PER RACK:

AJ-64-86-100CE/CS/CGP MACHINES	.77

WATER TEMPERATURES:

AJ-64-86-100CE/CS/CGP MODELS:

WASH (MINIMUM)	150°F
POWER RINSE (MINIMUM)	160°F
FINAL RINSE (MINIMUM)	180°F

FLOW PRESSURE (PSI) 20 ± 5

FLOWRATE (GPM):

AJ-64-86-100CE/CS/CGP	3.7

STEAM COIL TANK HEAT (CS MODELS ONLY):

STEAM INLET PRESSURE (PSIG)	10-20
STEAM CONNECTION NPT	3/4”
CONSUMPTION @ 15 PSIG (lbs/hr):	
AJ-64-86-100CS/CSL	100

MOTOR ELECTRICAL CHARACTERISTICS:

DRIVE MOTOR HP	1/4
WASH MOTOR HP	2
POWER RINSE MOTOR HP	2
PREWASH MOTOR HP:	
AJ-86 MODELS	1
AJ-100 MODELS	2

NOTE: Typical Electrical Circuit is based upon (1) 125% of the full amperage load of the machine and (2) typical fixed-trip circuit breaker sizes as listed in the NEC 2002 Edition. Local codes may require more stringent protection than what is displayed here. Always verify with your electrical service contractor that your circuit protection is adequate and meets all applicable national and local codes. These numbers are provided in this manual simply for reference and may change without notice at any given time.

SECTION 1: SPECIFICATION INFORMATION

ELECTRICAL REQUIREMENTS

AJ-64CE MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	139 A	175 AMP
230	1	60	128 A	175 AMP
208	3	60	82 A	110 AMP
230	3	60	76 A	100 AMP
460	3	60	38 A	50 AMP

AJ-64CS MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	19 A	25 AMP
230	1	60	19 A	25 AMP
208	3	60	13 A	20 AMP
230	3	60	13 A	20 AMP
460	3	60	7 A	15 AMP

AJ-86CE MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	145 A	200 AMP
230	1	60	134 A	175 AMP
208	3	60	86 A	110 AMP
230	3	60	79 A	100 AMP
460	3	60	39 A	50 AMP

AJ-86CGP MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	26 A	35 AMP
230	1	60	26 A	35 AMP
208	3	60	17 A	25 AMP
230	3	60	17 A	25 AMP
460	3	60	9 A	15 AMP

AJ-86CS MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	25 A	35 AMP
230	1	60	25 A	35 AMP
208	3	60	16 A	20 AMP
230	3	60	16 A	20 AMP
460	3	60	8 A	15 AMP

AJ-100CE MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	148 A	200 AMP
230	1	60	136 A	175 AMP
208	3	60	88 A	110 AMP
230	3	60	81 A	110 AMP
460	3	60	41 A	60 AMP

AJ-100CGP MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	28 A	35 AMP
230	1	60	28 A	35 AMP
208	3	60	19 A	25 AMP
230	3	60	19 A	25 AMP
460	3	60	10 A	15 AMP

AJ-100CS MODELS

VOLTS	PH	HZ	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208	1	60	28 A	35 AMP
230	1	60	28 A	35 AMP
208	3	60	18 A	25 AMP
230	3	60	18 A	25 AMP
460	3	60	9 A	15 AMP

NOTE: Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and may be subject to change without notice.

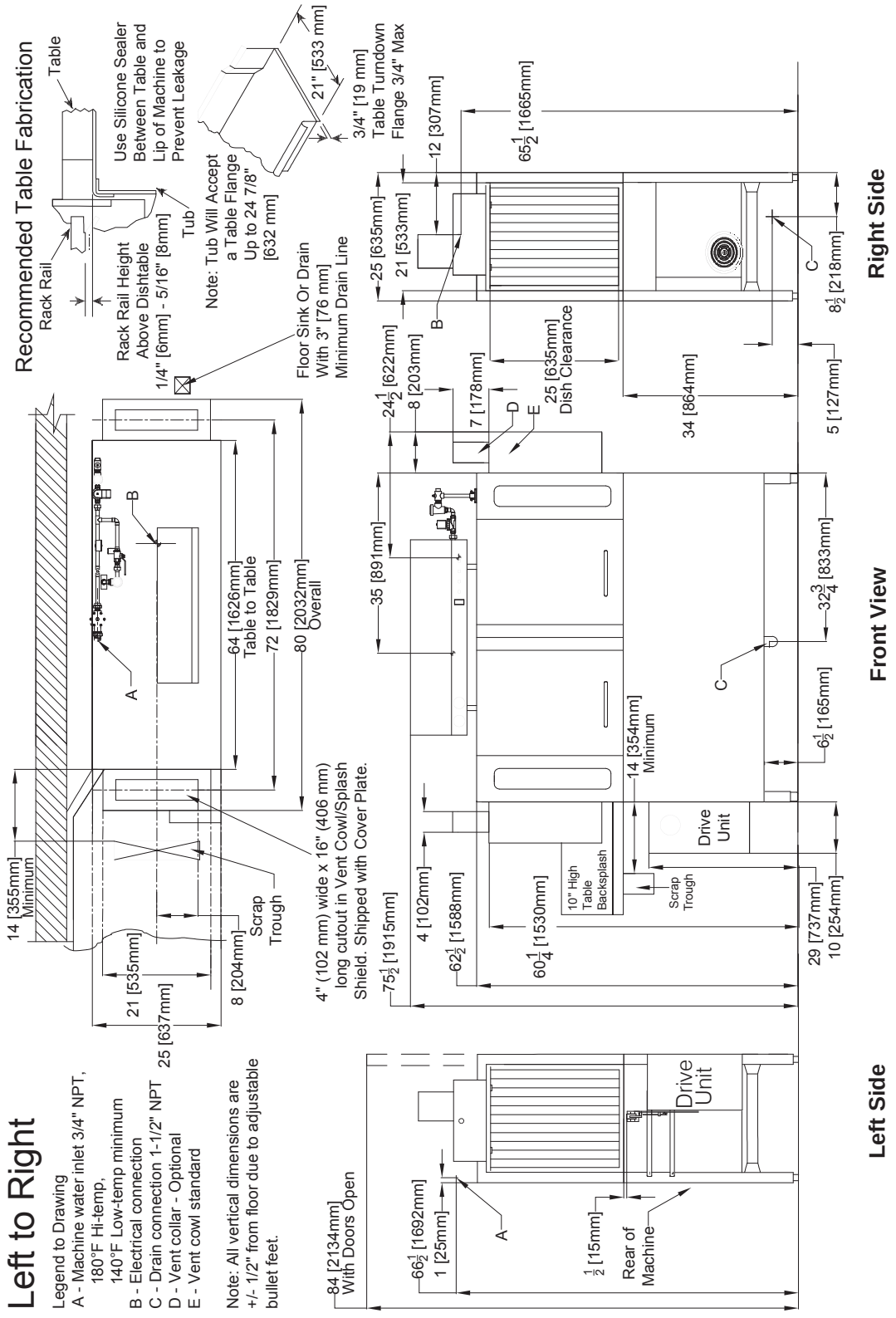
D226 STEAM BOOSTER

ELECTRICAL REQUIREMENTS:	
VOLTAGE (V)	208-230
FREQUENCY (HZ)	60
PHASE	SINGLE
WATER REQUIREMENTS:	
INCOMING WATER TEMPERATURE (MINIMUM)	110°F
FLOW PRESSURE (PSI)	20 ± 5
STEAM REQUIREMENTS:	
INCOMING STEAM PRESSURE (PSIG)	15-25
HEAT EXCHANGER SPECIFICATIONS:*	
TUBESIDE WORKING PRESSURE (PSI)	125
SHELLSIDE WORKING PRESSURE (PSI)	125
TUBESIDE HYDROSTATIC TEST PRESSURE (PSI)	250
SHELLSIDE HYDROSTATIC TEST PRESSURE (PSI)	188
MAXIMUM OPERATING TEMPERATURE	295°F
MAXIMUM SHELLSIDE STEAM PRESSURE (PSI)	125

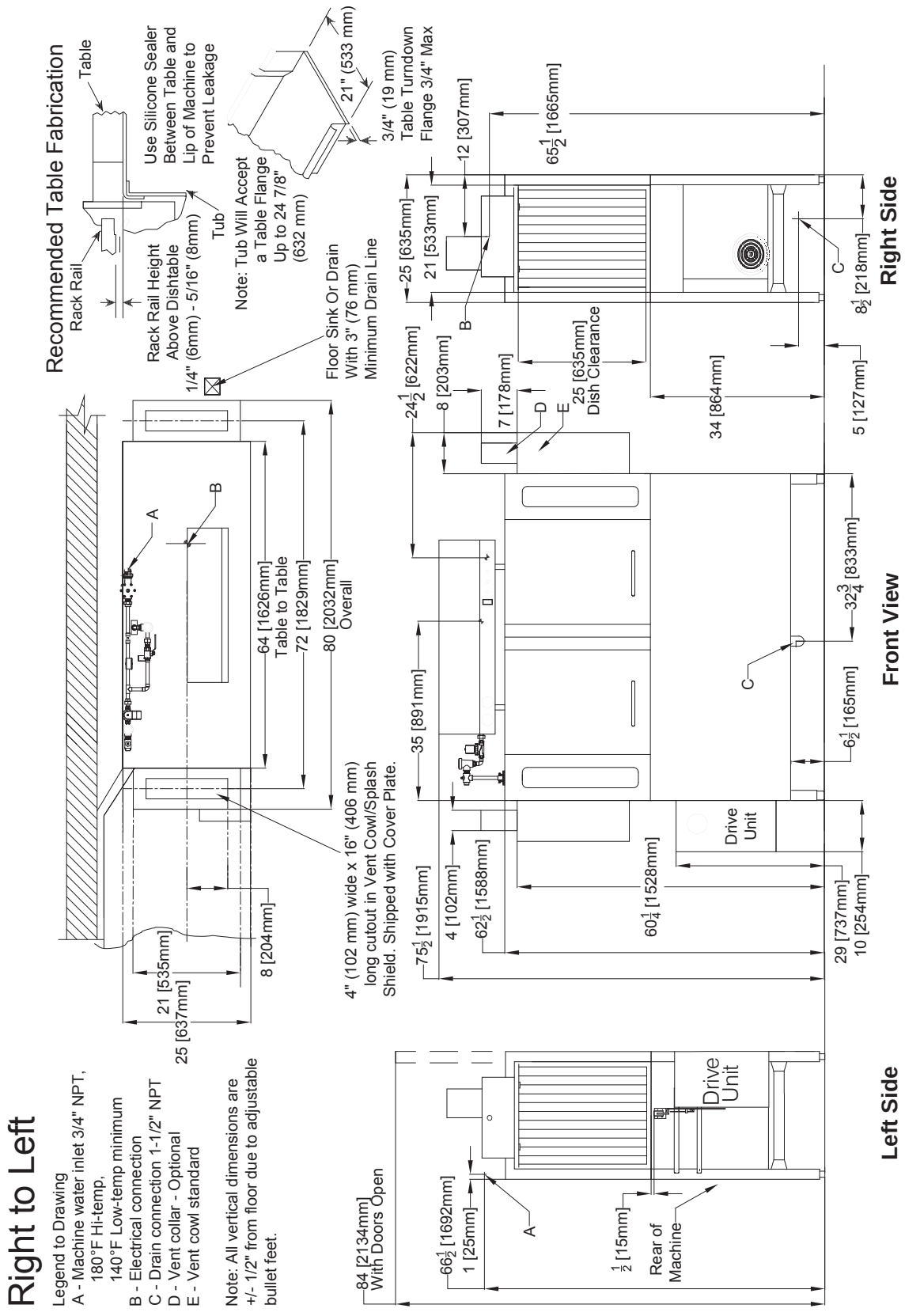
* - Indicates typical design criteria but is subject to change without notice. For more information, contact you authorized Jackson service representative.

WATER OUTLET SAFETY VALVE SET PRESSURE (PSI):	125
STEAM RELIEF VALVE SET PRESSURE (PSI):	50

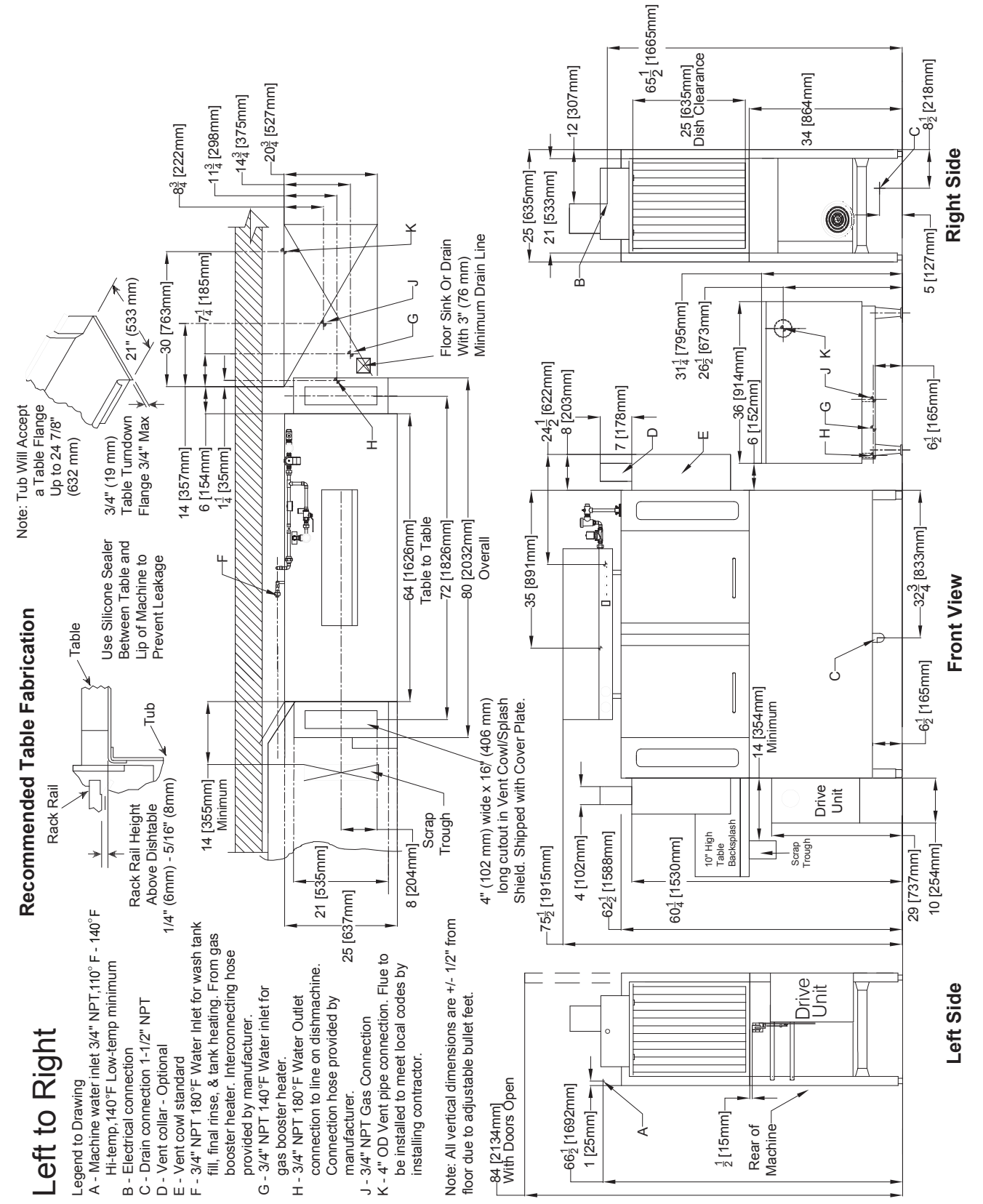
AJ-64 ELECTRIC - LEFT TO RIGHT

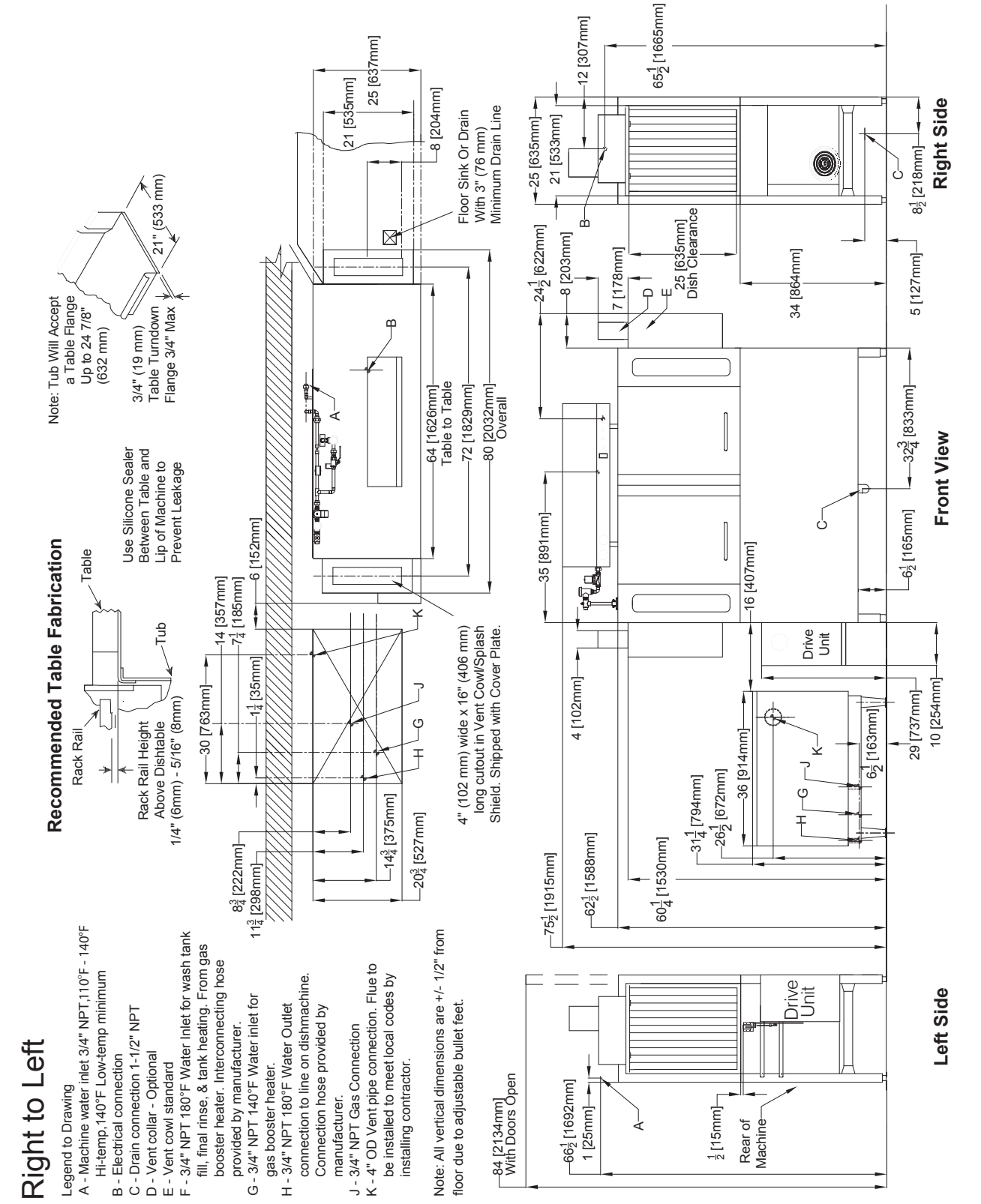


AJ-64 ELECTRIC - RIGHT TO LEFT



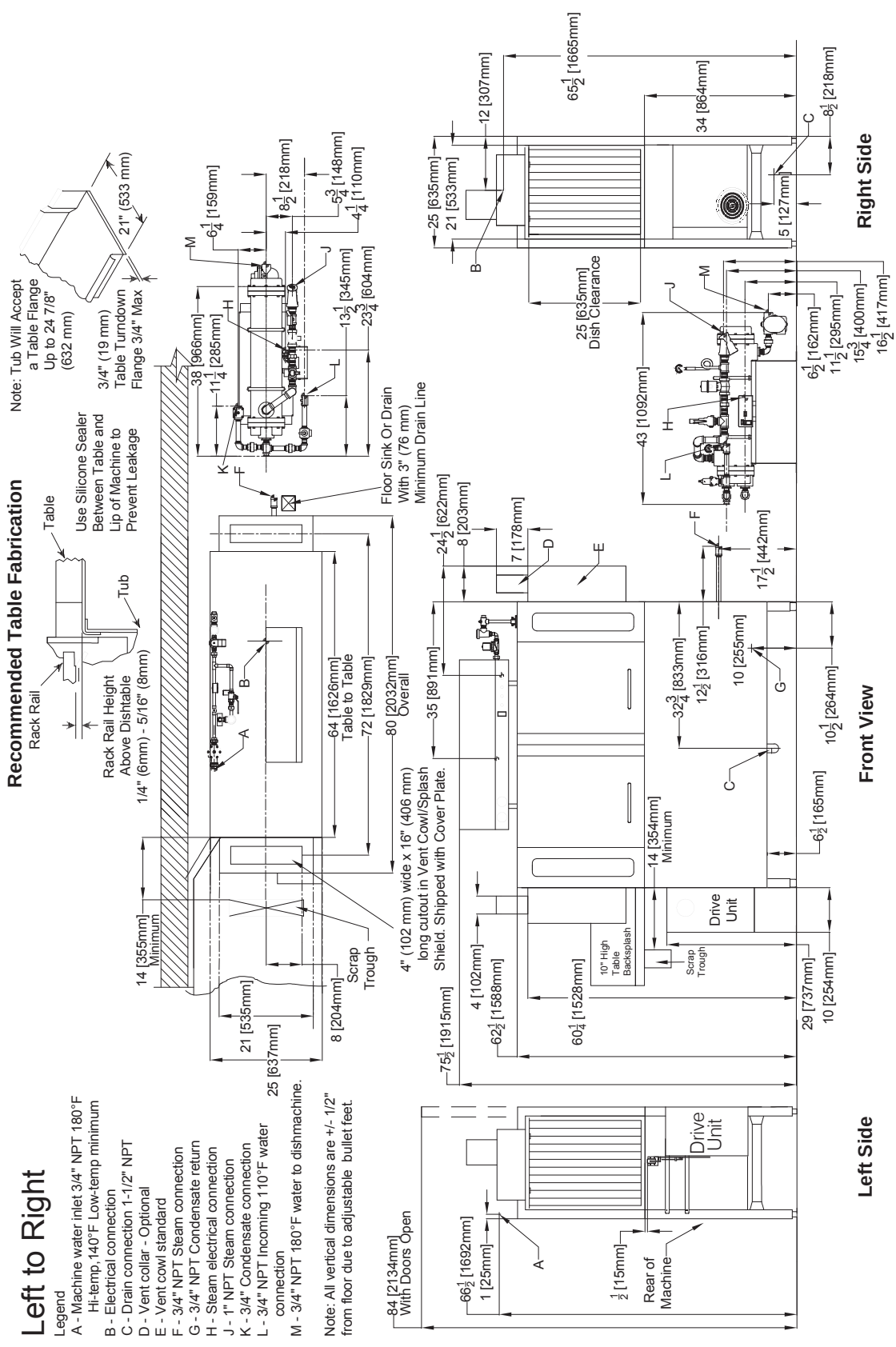
AJ-64 GAS - LEFT TO RIGHT

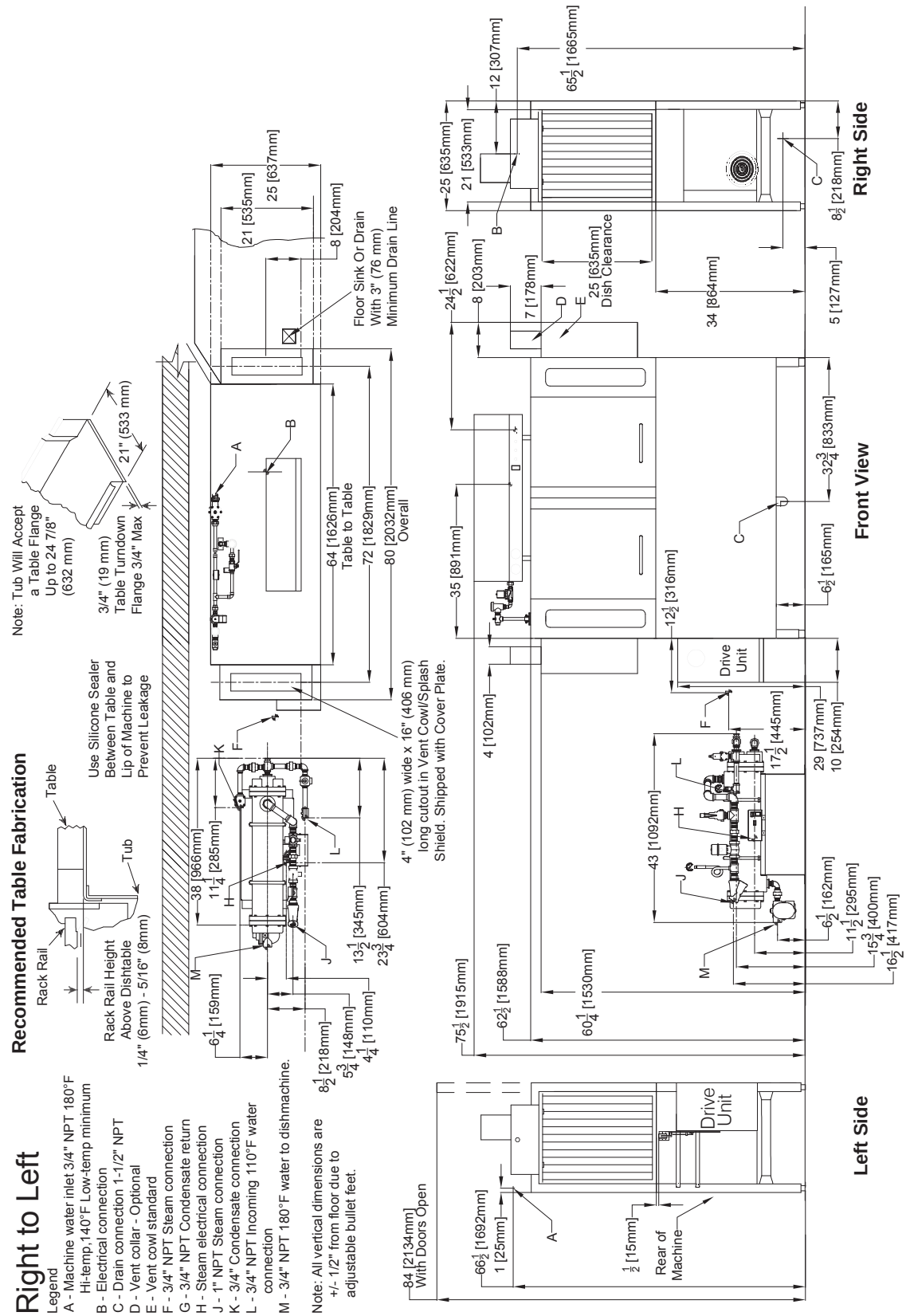



Right to Left
Legend to Drawing
A - Machine water inlet 3/4" NPT,110°F - 140°F Hi-temp,140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT 180°F Water Inlet for wash tank fill, final rinse, & tank heating. From gas booster heater. Interconnecting hose provided by manufacturer.
G - 3/4" NPT 140°F Water inlet for gas booster heater.
H - 3/4" NPT 180°F Water Outlet connection to line on dishmachine. Connection hose provided by manufacturer.
J - 3/4" NPT Gas Connection
K - 4" OD Vent pipe connection. Flue to be installed to meet local codes by installing contractor.
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Rack Rail Height Above Dishtable 1/4" (6mm) - 5/16" (8mm)
Tub
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Note: Tub Will Accept a Table Flange Up to 24 7/8" (632 mm)
3/4" (19 mm) Table Turndown Flange 3/4" Max
21" (533 mm)
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
84 [2134mm] With Doors Open
Left Side
Front View
Right Side
Drive Unit
Rear of Machine

SECTION 1: SPECIFICATION INFORMATION

AJ-64 STEAM - LEFT TO RIGHT


Left to Right
Legend
A - Machine water inlet 3/4" NPT 180°F Hi-temp, 140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT Steam connection
G - 3/4" NPT Condensate return
H - Steam electrical connection
J - 1" NPT Steam connection
K - 3/4" Condensate connection
L - 3/4" NPT Incoming 110°F water connection
M - 3/4" NPT 180°F water to dishmachine.
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Tub
Rack Rail Height Above Dishtable 1/4" (6mm) - 5/16" (8mm)
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Note: Tub Will Accept a Table Flange Up to 24 7/8" (632 mm)
3/4" (19 mm) Table Turndown Flange 3/4" Max
21" (533 mm)
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
Scrap Trough
10" High Table Backsplash
Drive Unit
Rear of Machine
14 [355mm] Minimum
14 [354mm] Minimum
Left Side
Front View
Right Side

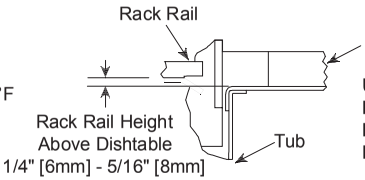

Right to Left
Legend
A - Machine water inlet 3/4" NPT 180°F Hi-temp,140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT Steam connection
G - 3/4" NPT Condensate return
H - Steam electrical connection
J - 1" NPT Steam connection
K - 3/4" Condensate connection
L - 3/4" NPT Incoming 110°F water connection
M - 3/4" NPT 180°F water to dishmachine.
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Tub
Rack Rail Height Above Dishtable
1/4" (6mm) - 5/16" (8mm)
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Note: Tub Will Accept a Table Flange Up to 24 7/8" (632 mm)
3/4" (19 mm) Table Turndown Flange 3/4" Max
21" (533 mm)
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
64 [1626mm] Table to Table
72 [1829mm]
80 [2032mm] Overall
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
84 [2134mm] With Doors Open
Rear of Machine
Drive Unit
Left Side
Front View
Right Side
25 [635mm] Dish Clearance
34 [864mm]

Left to Right

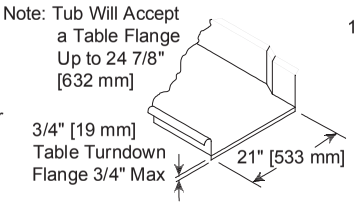
Legend
- A - Machine water inlet 3/4" NPT, 180°F Hi-temp,140°F Low-temp minimum
- B - Electrical connection
- C - Drain connection 1-1/2" NPT
- D - Vent collar - Optional
- E - Vent cowl standard
- F - Prewash water inlet 3/4" NPT 110°F-140°F
- G - Cold water thermostat plumbing connection 3/4" NPT - Optional

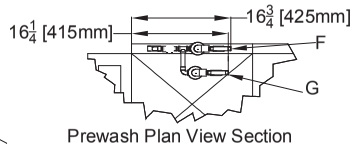
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.

Recommended Table Fabrication

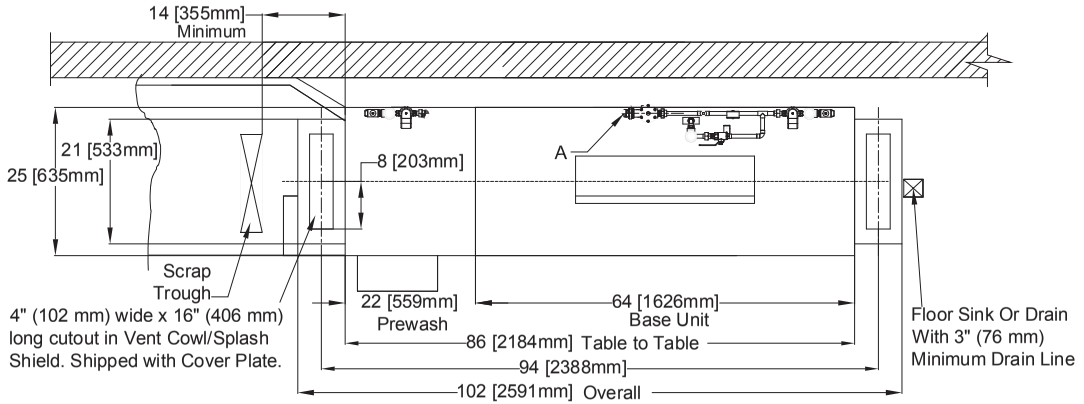


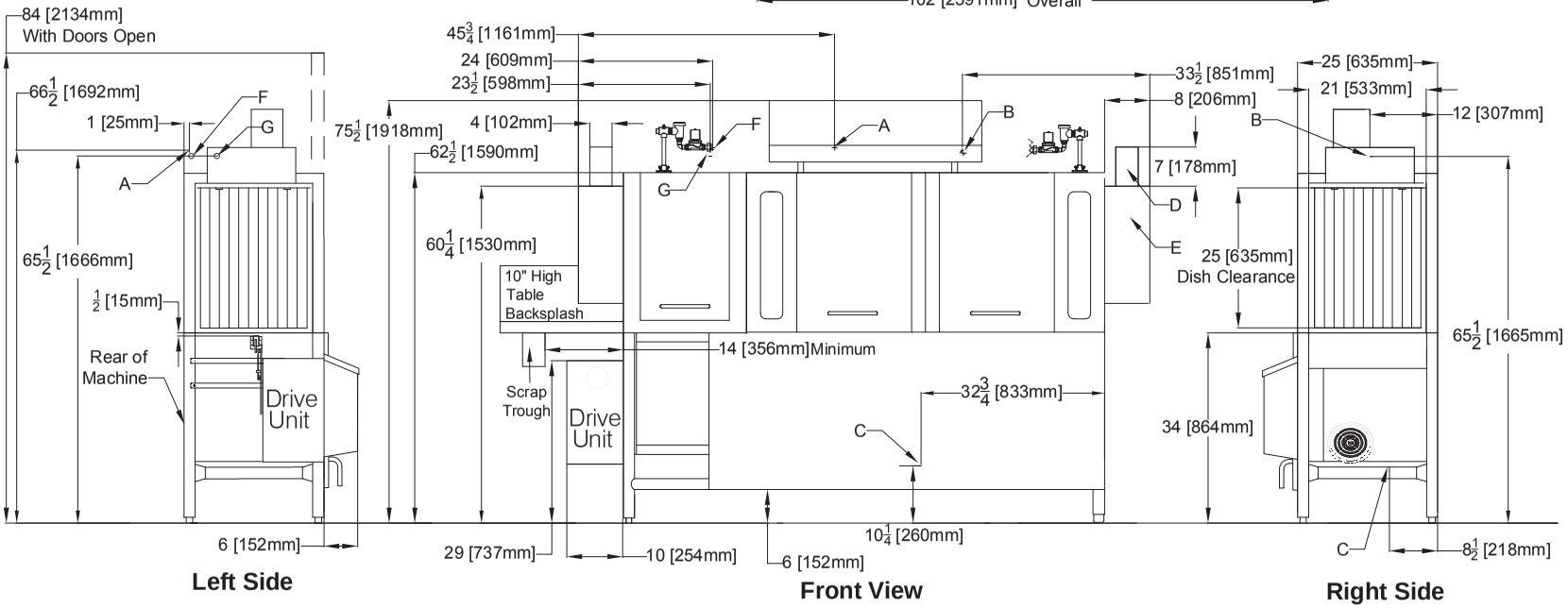
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage

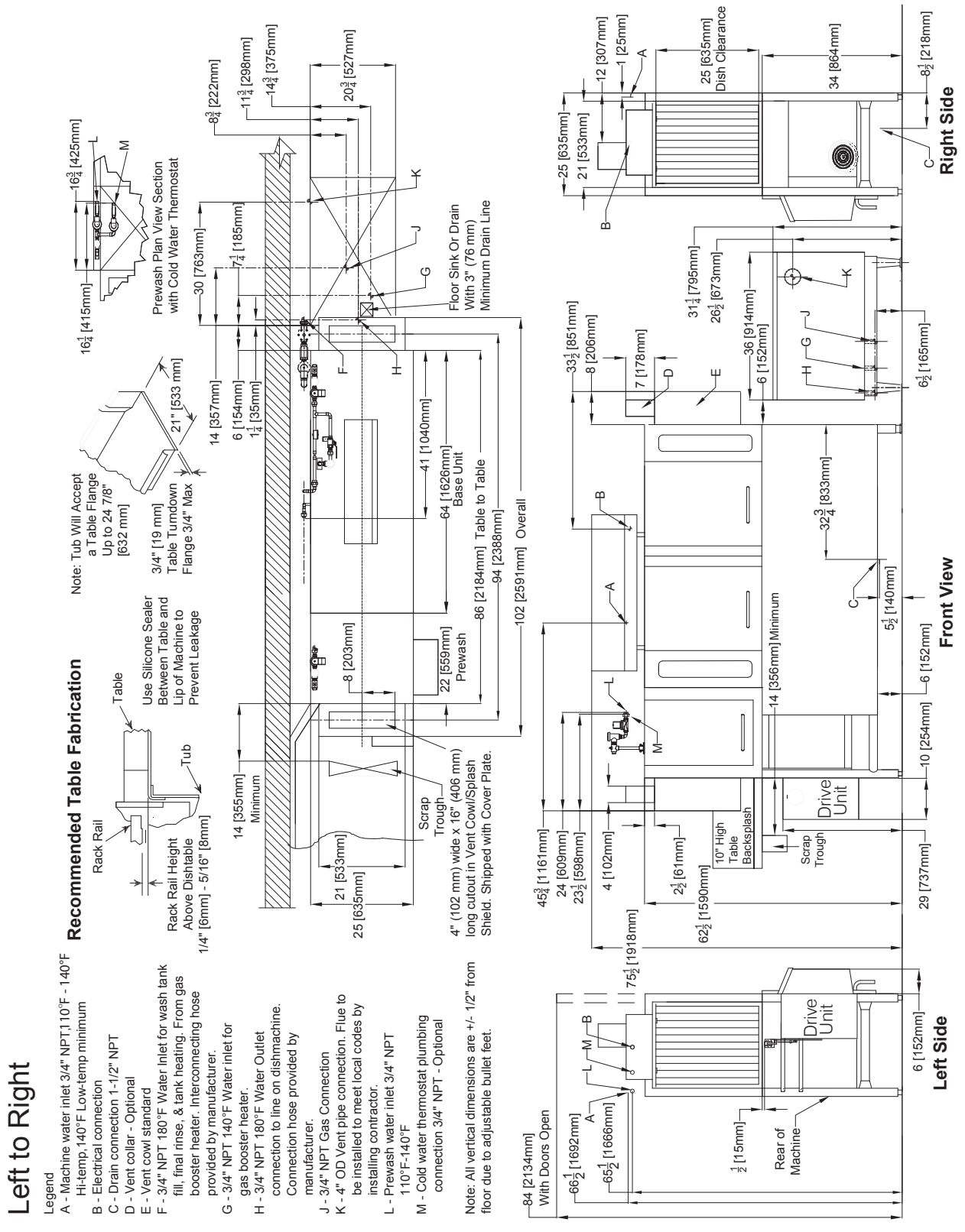


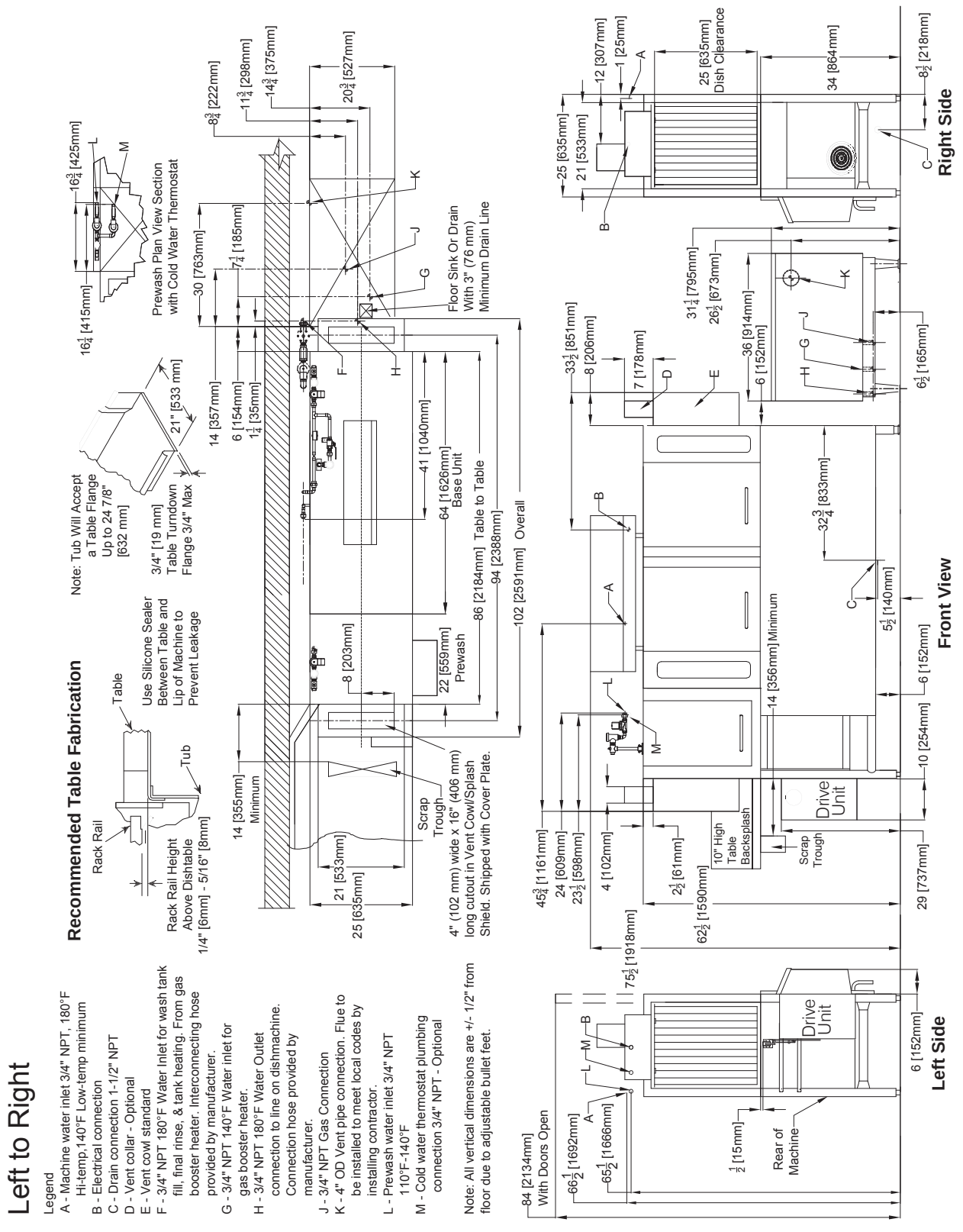


Prewash Plan View Section with Cold Water Thermostat

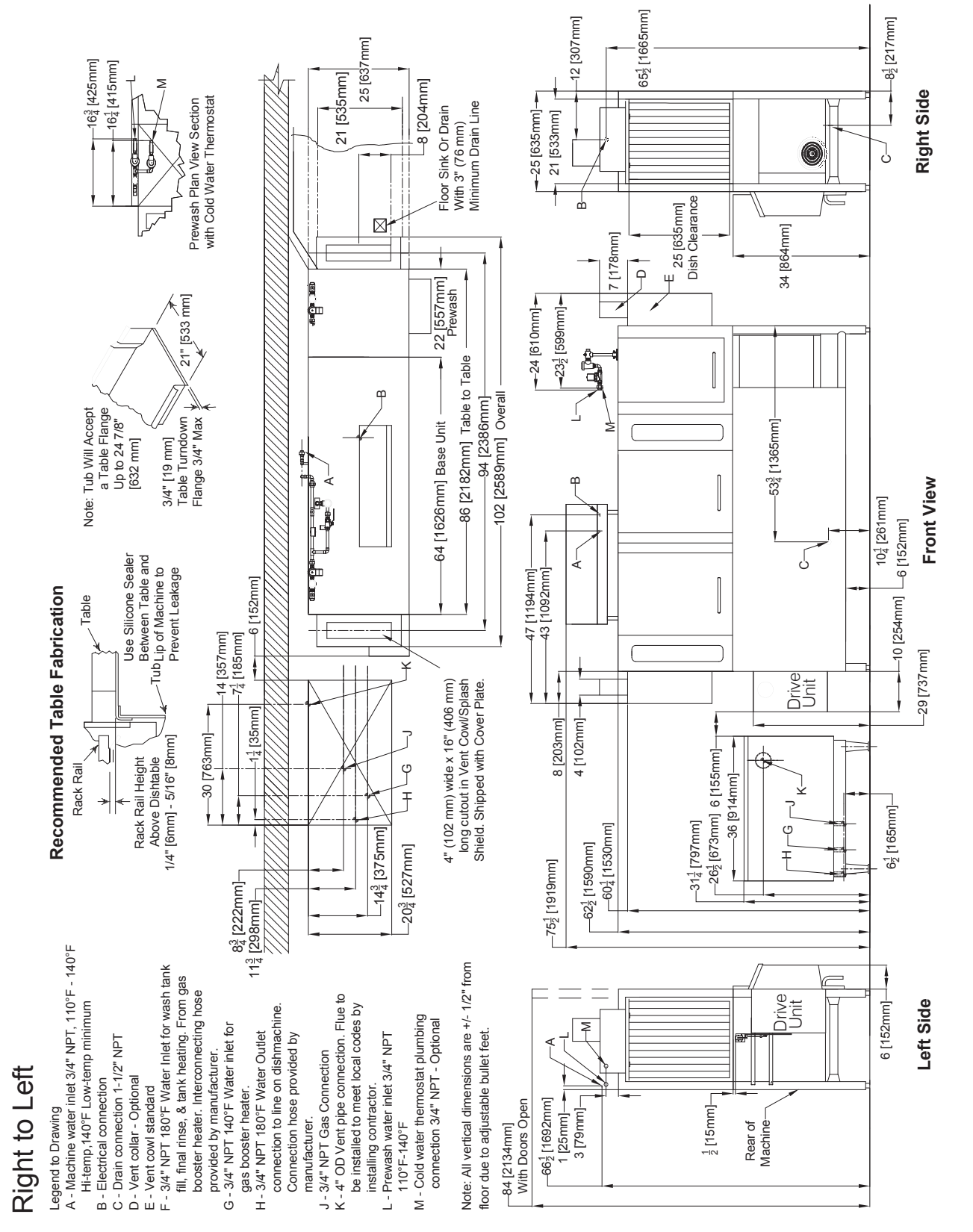

14 [355mm] Minimum
21 [533mm]
25 [635mm]
8 [203mm]
A
Scrap Trough
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
22 [559mm] Prewash
64 [1626mm] Base Unit
86 [2184mm] Table to Table
94 [2388mm]
102 [2591mm] Overall
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line



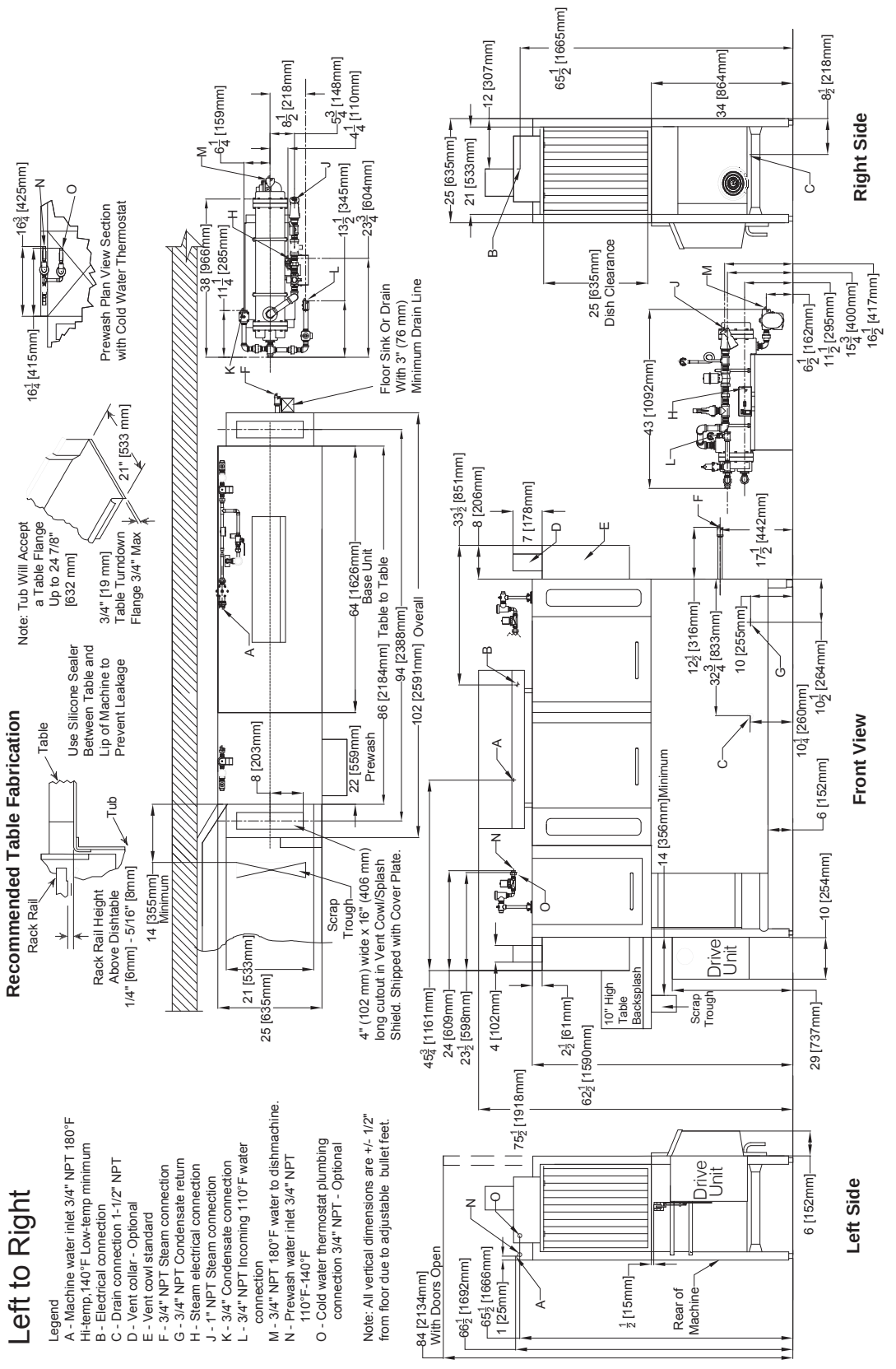

Left to Right
Legend
A - Machine water inlet 3/4" NPT,110°F - 140°F Hi-temp,140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT 180°F Water Inlet for wash tank fill, final rinse, & tank heating. From gas booster heater. Interconnecting hose provided by manufacturer.
G - 3/4" NPT 140°F Water inlet for gas booster heater.
H - 3/4" NPT 180°F Water Outlet connection to line on dishmachine. Connection hose provided by manufacturer.
J - 3/4" NPT Gas Connection
K - 4" OD Vent pipe connection. Flue to be installed to meet local codes by installing contractor.
L - Prewash water inlet 3/4" NPT 110°F-140°F
M - Cold water thermostat plumbing connection 3/4" NPT - Optional
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Tub
Rack Rail Height Above Dishtable 1/4" [6mm] - 5/16" [8mm]
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Note: Tub Will Accept a Table Flange Up to 24 7/8" [632 mm]
3/4" [19 mm] Table Turndown Flange 3/4" Max
21" [533 mm]
Prewash Plan View Section with Cold Water Thermostat
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
Scrap Trough
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
Drive Unit
10" High Table Backsplash
Rear of Machine
Left Side
Front View
Right Side
84 [2134mm] With Doors Open
102 [2591mm] Overall
86 [2184mm] Table to Table
64 [1626mm] Base Unit
22 [559mm] Prewash
14 [356mm] Minimum

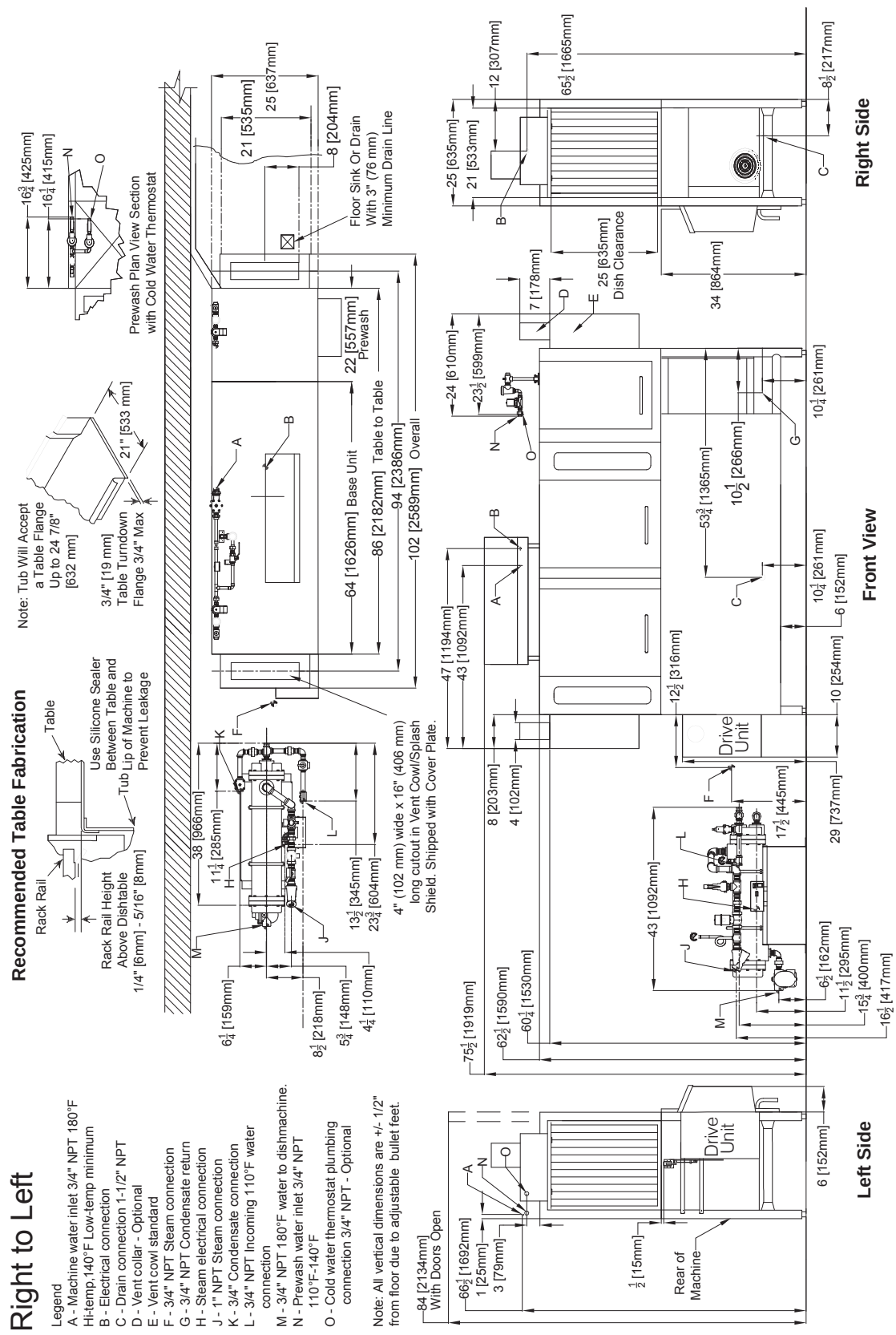

Left to Right
Legend
A - Machine water inlet 3/4" NPT, 180°F Hi-temp,140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT 180°F Water Inlet for wash tank fill, final rinse, & tank heating. From gas booster heater. Interconnecting hose provided by manufacturer.
G - 3/4" NPT 140°F Water inlet for gas booster heater.
H - 3/4" NPT 180°F Water Outlet connection to line on dishmachine. Connection hose provided by manufacturer.
J - 3/4" NPT Gas Connection
K - 4" OD Vent pipe connection. Flue to be installed to meet local codes by installing contractor.
L - Prewash water inlet 3/4" NPT 110°F-140°F
M - Cold water thermostat plumbing connection 3/4" NPT - Optional
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Tub
Rack Rail Height Above Dishtable 1/4" [6mm] - 5/16" [8mm]
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Note: Tub Will Accept a Table Flange Up to 24 7/8" [632 mm]
3/4" [19 mm] Table Turndown Flange 3/4" Max
21" [533 mm]
Prewash Plan View Section with Cold Water Thermostat
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
14 [355mm] Minimum
21 [533mm]
25 [635mm]
8 [203mm]
Scrap Trough
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
22 [559mm] Prewash
41 [1040mm]
64 [1626mm] Base Unit
86 [2184mm] Table to Table
94 [2388mm]
102 [2591mm] Overall
14 [357mm]
6 [154mm]
1½ [35mm]
30 [763mm]
7¼ [185mm]
8¾ [222mm]
11¾ [298mm]
14¾ [375mm]
20¾ [527mm]
16¼ [415mm]
16¾ [425mm]
Left Side
Front View
Right Side
Drive Unit
Rear of Machine
½ [15mm]
84 [2134mm] With Doors Open
66½ [1692mm]
65½ [1666mm]
75½ [1918mm]
45¾ [1161mm]
24 [609mm]
23½ [598mm]
4 [102mm]
2½ [61mm]
62½ [1590mm]
10" High Table Backsplash
14 [356mm] Minimum
6 [152mm]
10 [254mm]
29 [737mm]
5½ [140mm]
32¾ [833mm]
33½ [851mm]
8 [206mm]
7 [178mm]
31¼ [795mm]
26½ [673mm]
36 [914mm]
6 [152mm]
6½ [165mm]
12 [307mm]
1 [25mm]
25 [635mm] Dish Clearance
34 [864mm]
25 [635mm]
21 [533mm]
8½ [218mm]

AJ-86 GAS - RIGHT TO LEFT

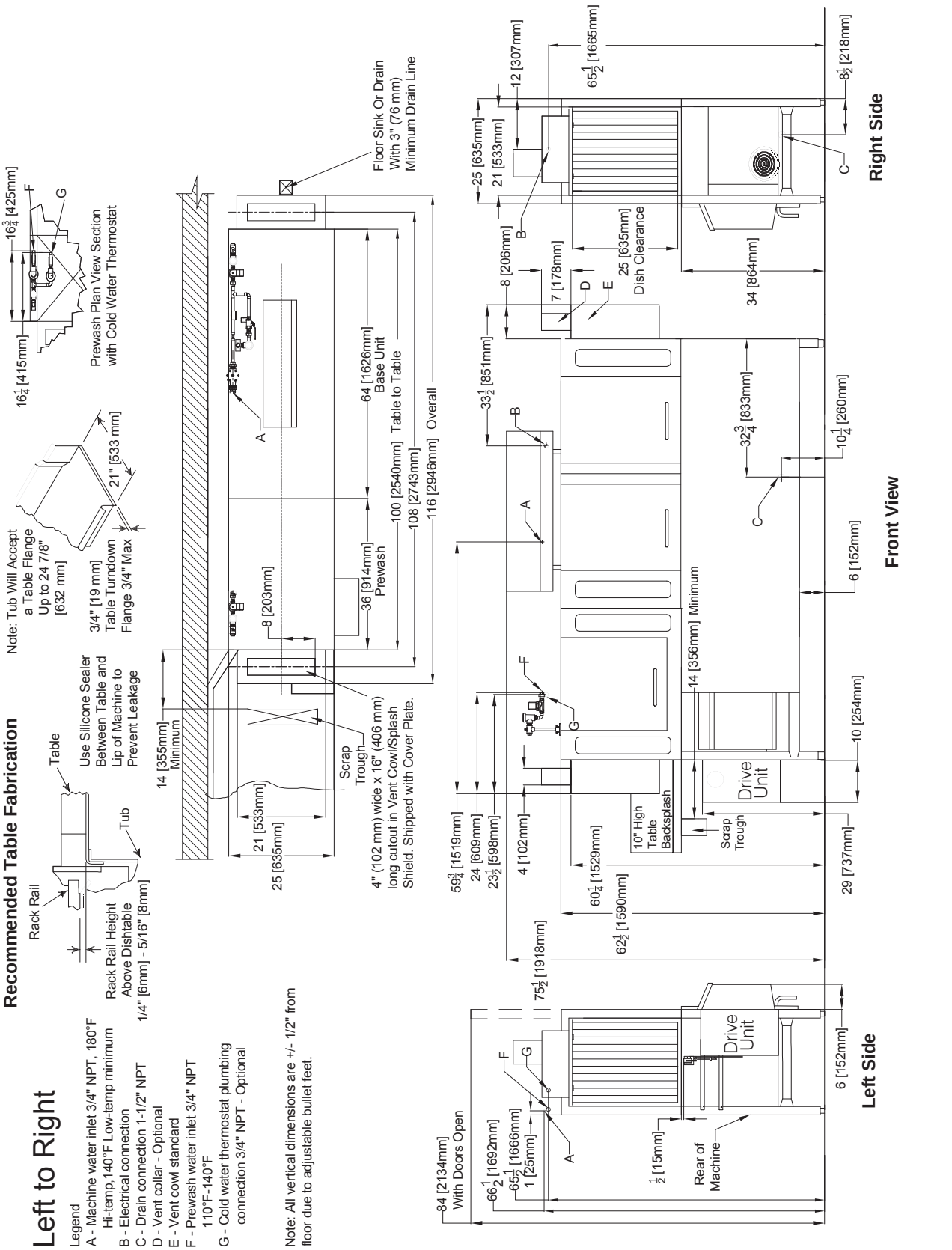

Right to Left
Legend to Drawing
A - Machine water inlet 3/4" NPT, 110°F - 140°F Hi-temp,140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT 180°F Water Inlet for wash tank fill, final rinse, & tank heating. From gas booster heater. Interconnecting hose provided by manufacturer.
G - 3/4" NPT 140°F Water inlet for gas booster heater.
H - 3/4" NPT 180°F Water Outlet connection to line on dishmachine. Connection hose provided by manufacturer.
J - 3/4" NPT Gas Connection
K - 4" OD Vent pipe connection. Flue to be installed to meet local codes by installing contractor.
L - Prewash water inlet 3/4" NPT 110°F-140°F
M - Cold water thermostat plumbing connection 3/4" NPT - Optional
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Tub
Rack Rail Height Above Dishtable
1/4" [6mm] - 5/16" [8mm]
Note: Tub Will Accept a Table Flange Up to 24 7/8" [632 mm]
21" [533 mm]
3/4" [19 mm] Table Turndown Flange 3/4" Max
Prewash Plan View Section with Cold Water Thermostat
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
64 [1626mm] Base Unit
86 [2182mm] Table to Table
94 [2386mm] Overall
102 [2589mm] Overall
22 [557mm] Prewash
Drive Unit
Left Side
Front View
Right Side
Rear of Machine
25 [635mm] Dish Clearance
34 [864mm]
84 [2134mm] With Doors Open

AJ-86 STEAM - LEFT TO RIGHT



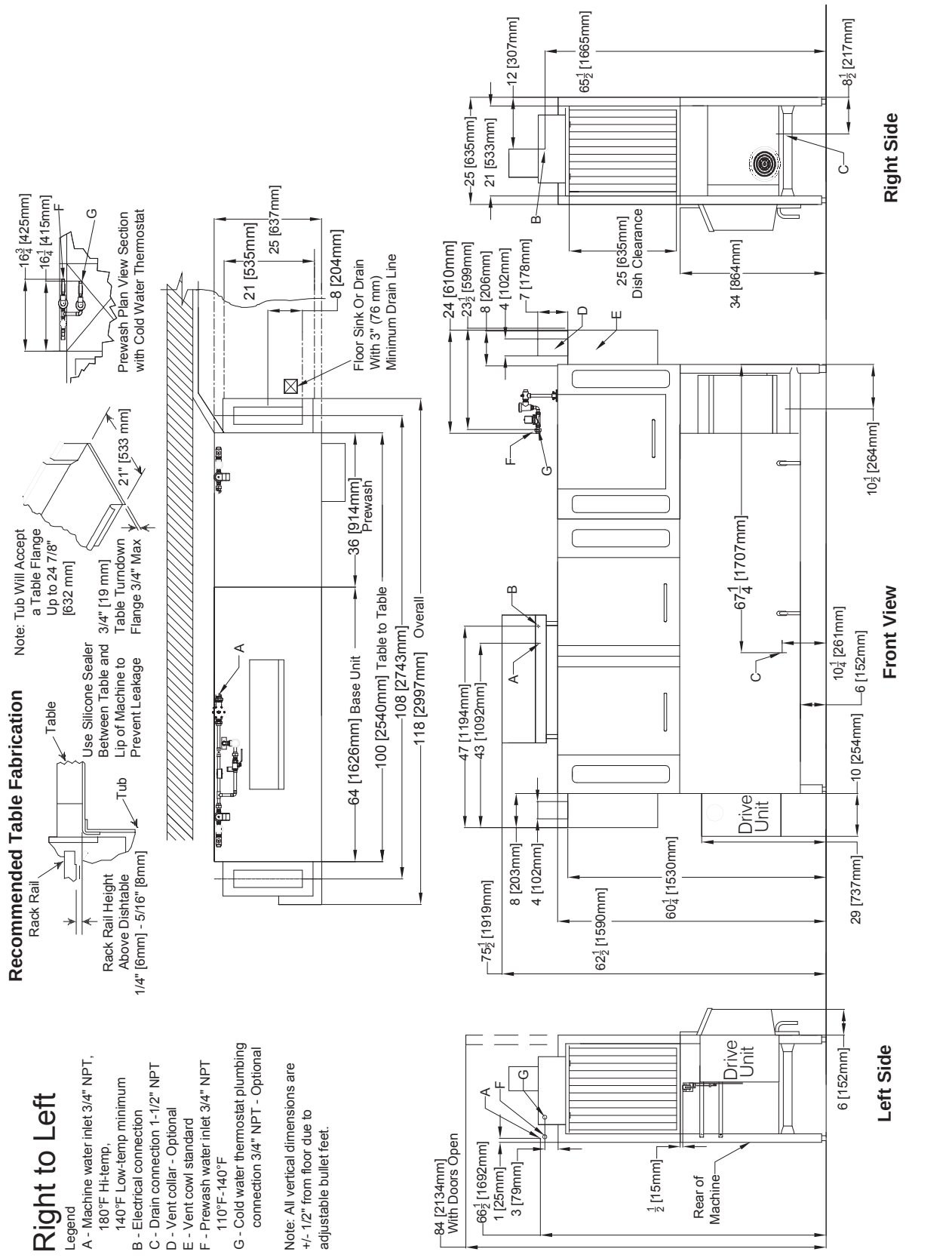

Right to Left
Legend
A - Machine water inlet 3/4" NPT 180°F Hi-temp,140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT Steam connection
G - 3/4" NPT Condensate return
H - Steam electrical connection
J - 1" NPT Steam connection
K - 3/4" Condensate connection
L - 3/4" NPT Incoming 110°F water connection
M - 3/4" NPT 180°F water to dishmachine.
N - Prewash water inlet 3/4" NPT 110°F-140°F
O - Cold water thermostat plumbing connection 3/4" NPT - Optional
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Use Silicone Sealer Between Table and Tub Lip of Machine to Prevent Leakage
Rack Rail Height Above Dishtable 1/4" [6mm] - 5/16" [8mm]
Note: Tub Will Accept a Table Flange Up to 24 7/8" [632 mm]
3/4" [19 mm] Table Turndown Flange 3/4" Max
21" [533 mm]
Prewash Plan View Section with Cold Water Thermostat
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
64 [1626mm] Base Unit
86 [2182mm] Table to Table
94 [2386mm] Overall
102 [2589mm] Overall
22 [557mm] Prewash
21 [535mm]
25 [637mm]
8 [204mm]
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
Drive Unit
Front View
Left Side
Right Side
Rear of Machine
25 [635mm] Dish Clearance
34 [864mm]
84 [2134mm] With Doors Open

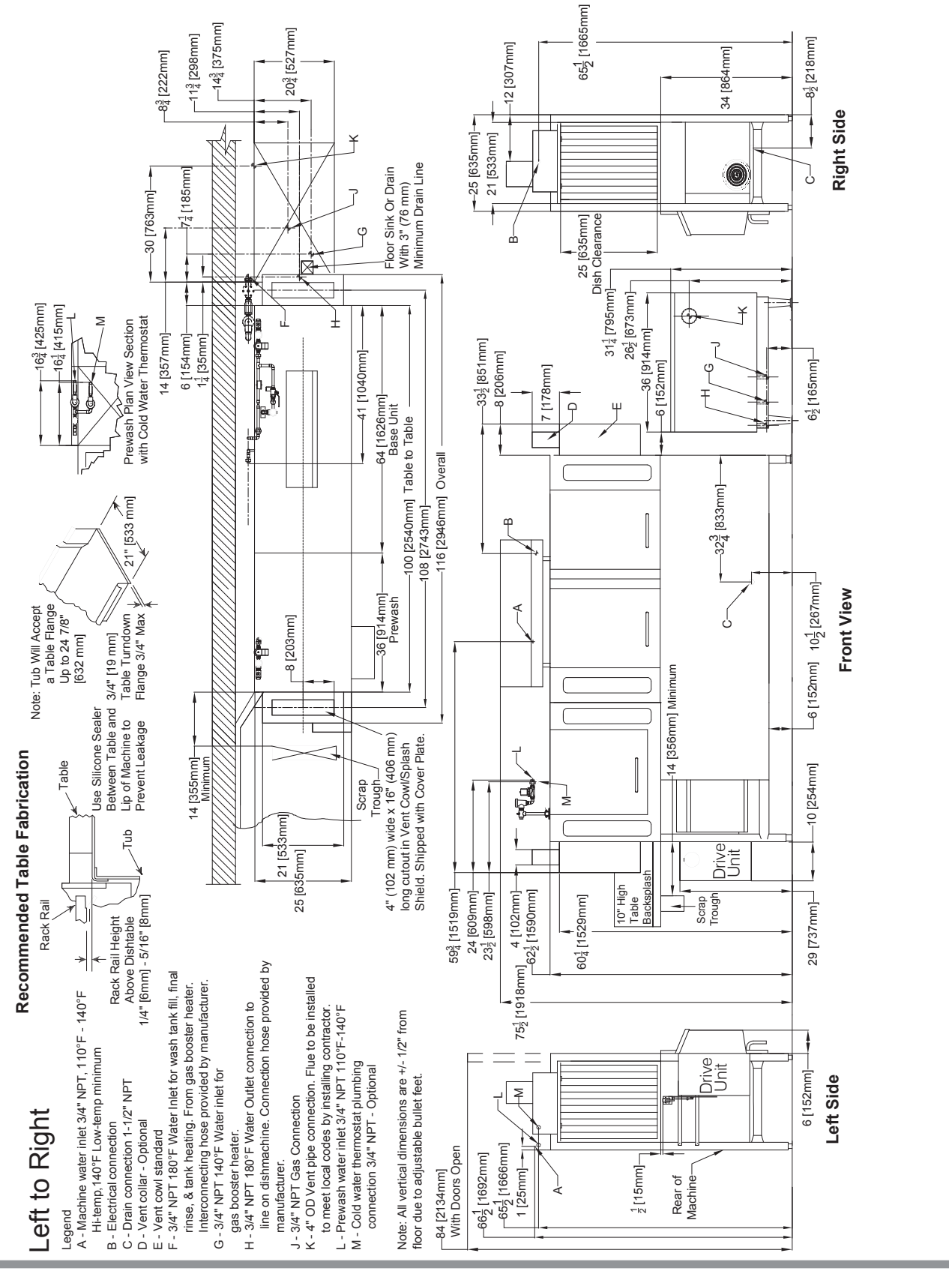
AJ-100 ELECTRIC - LEFT TO RIGHT



SECTION 1: SPECIFICATION INFORMATION

AJ-100 ELECTRIC - RIGHT TO LEFT



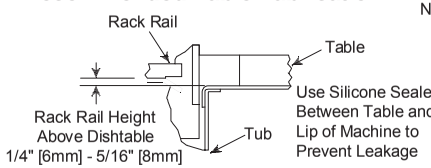

Left to Right
Recommended Table Fabrication
Rack Rail
Table
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Tub
Rack Rail Height Above Dishtable
1/4" [6mm] - 5/16" [8mm]
Legend
A - Machine water inlet 3/4" NPT, 110°F - 140°F Hi-temp,140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT 180°F Water inlet for wash tank fill, final rinse, & tank heating. From gas booster heater. Interconnecting hose provided by manufacturer.
G - 3/4" NPT 140°F Water inlet for gas booster heater.
H - 3/4" NPT 180°F Water Outlet connection to line on dishmachine. Connection hose provided by manufacturer.
J - 3/4" NPT Gas Connection
K - 4" OD Vent pipe connection. Flue to be installed to meet local codes by installing contractor.
L - Prewash water inlet 3/4" NPT 110°F-140°F
M - Cold water thermostat plumbing connection 3/4" NPT - Optional
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Note: Tub Will Accept a Table Flange Up to 24 7/8" [632 mm]
3/4" [19 mm] Table Turndown Flange 3/4" Max
21" [533 mm]
Prewash Plan View Section with Cold Water Thermostat
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
14 [355mm] Minimum
Scrap Trough
4" (102 mm) wide x 16" (406 mm) long cutout in Vent Cowl/Splash Shield. Shipped with Cover Plate.
Table to Table
Overall
Base Unit
Prewash
Drive Unit
10" High Table Backsplash
Scrap Trough
Rear of Machine
Dish Clearance
Left Side
Front View
Right Side

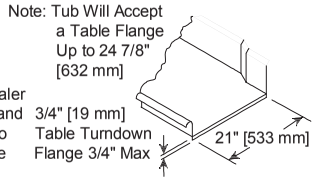
Right to Left

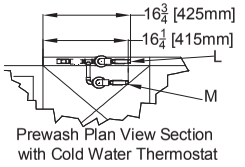
Legend to Drawing
- A - Machine water inlet 3/4" NPT, 110°F - 140°F Hi-temp,140°F Low-temp minimum
- B - Electrical connection
- C - Drain connection 1-1/2" NPT
- D - Vent collar - Optional
- E - Vent cowl standard
- F - 3/4" NPT 180°F Water Inlet for wash tank fill, final rinse, & tank heating. From gas booster heater. Interconnecting hose provided by manufacturer.
- G - 3/4" NPT 140°F Water inlet for gas booster heater.
- H - 3/4" NPT 180°F Water Outlet connection to line on dishmachine. Connection hose provided by manufacturer.
- J - 3/4" NPT Gas Connection
- K - 4" OD Vent pipe connection. Flue to be installed to meet local codes by installing contractor.
- L - Prewash water inlet 3/4" NPT 110°F-140°F
- M - Cold water thermostat plumbing connection 3/4" NPT - Optional

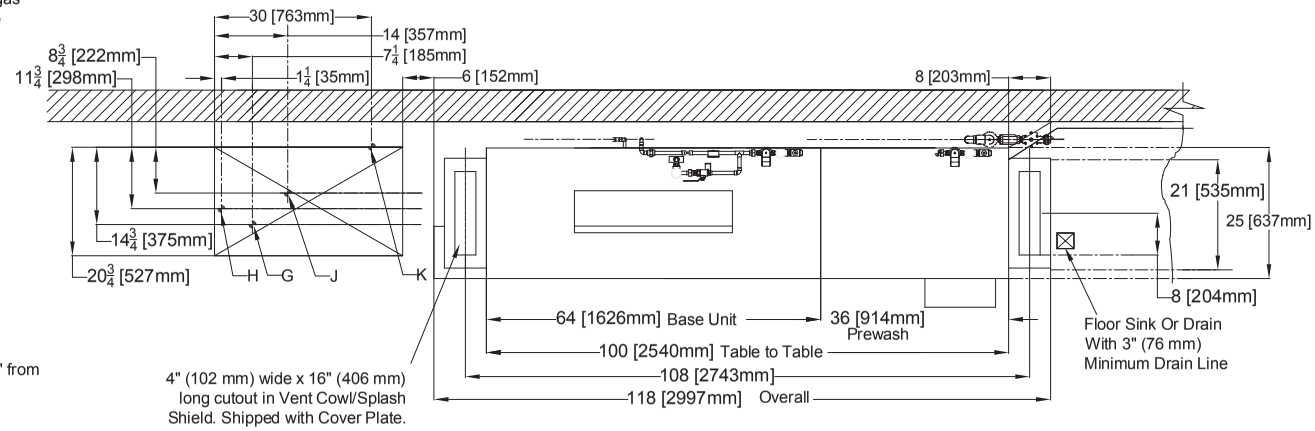
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.

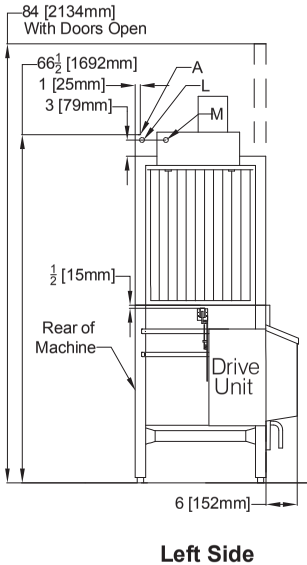
Recommended Table Fabrication


Rack Rail
Table
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Rack Rail Height Above Dishtable 1/4" [6mm] - 5/16" [8mm]
Tub

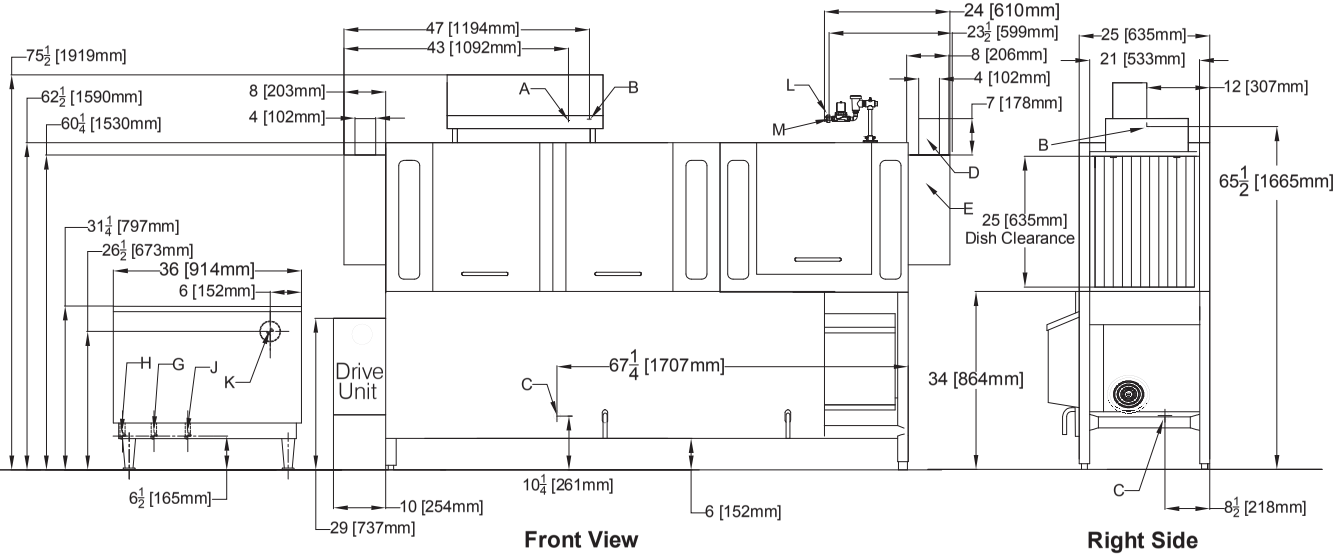








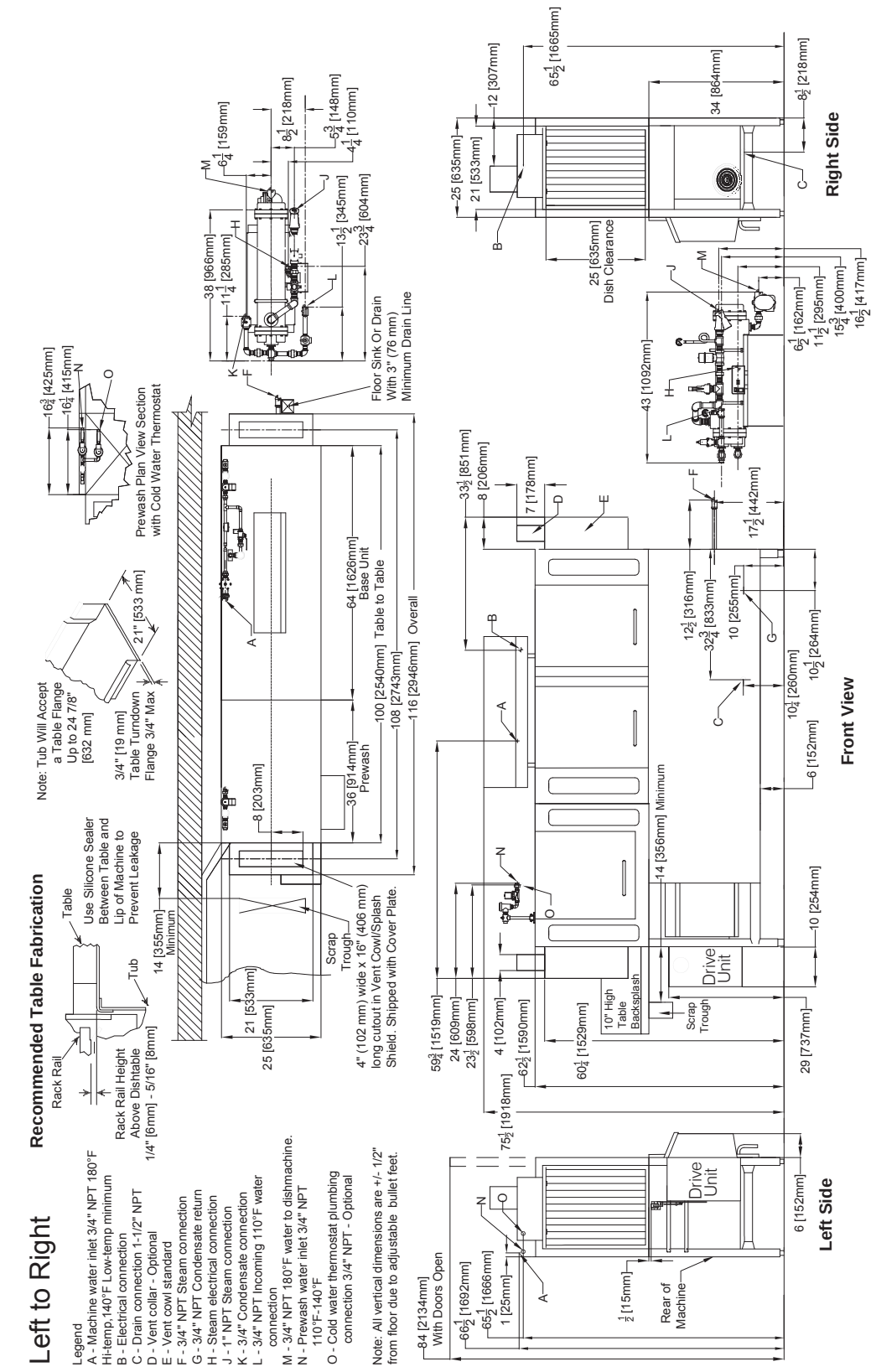
Left Side

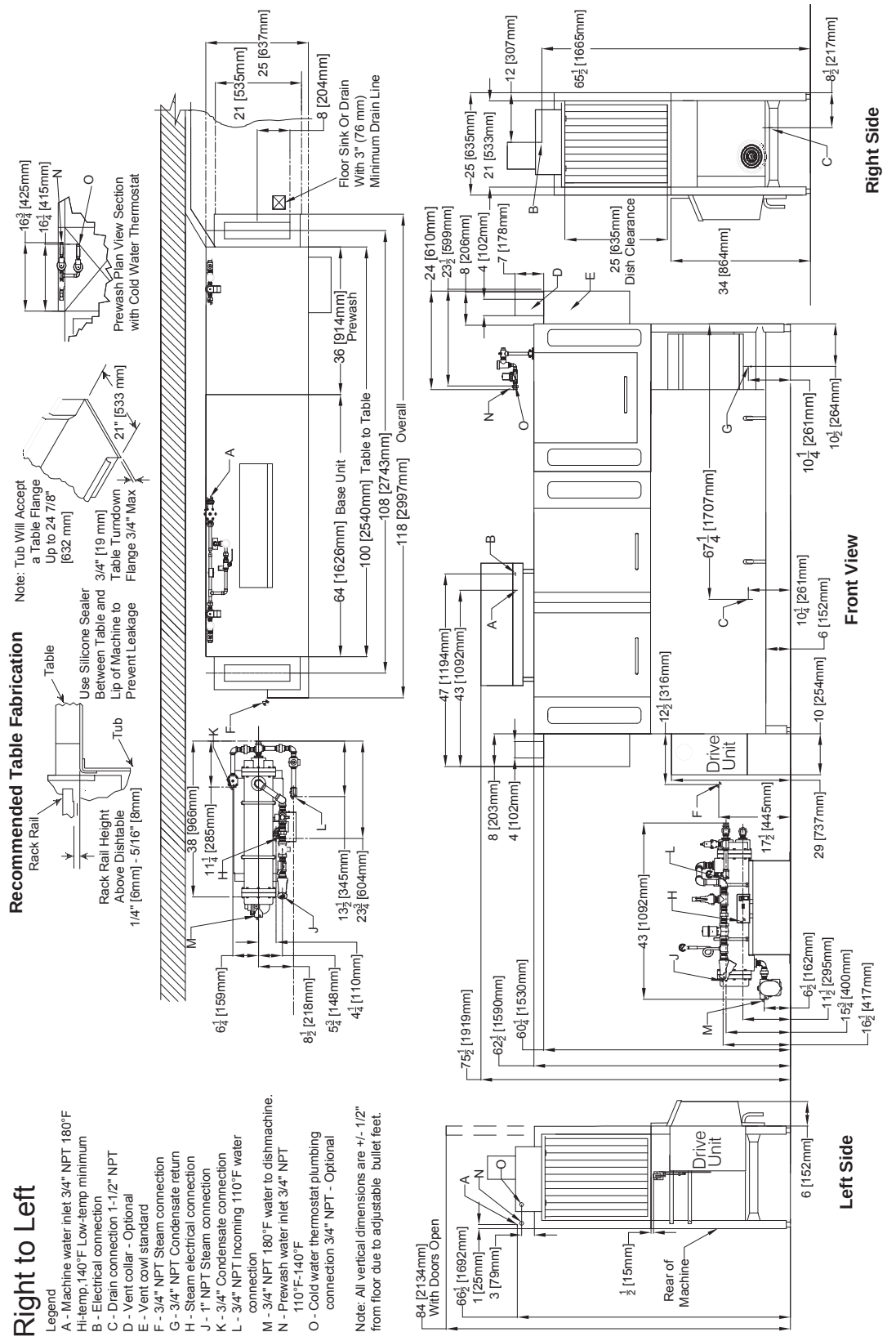


Front View

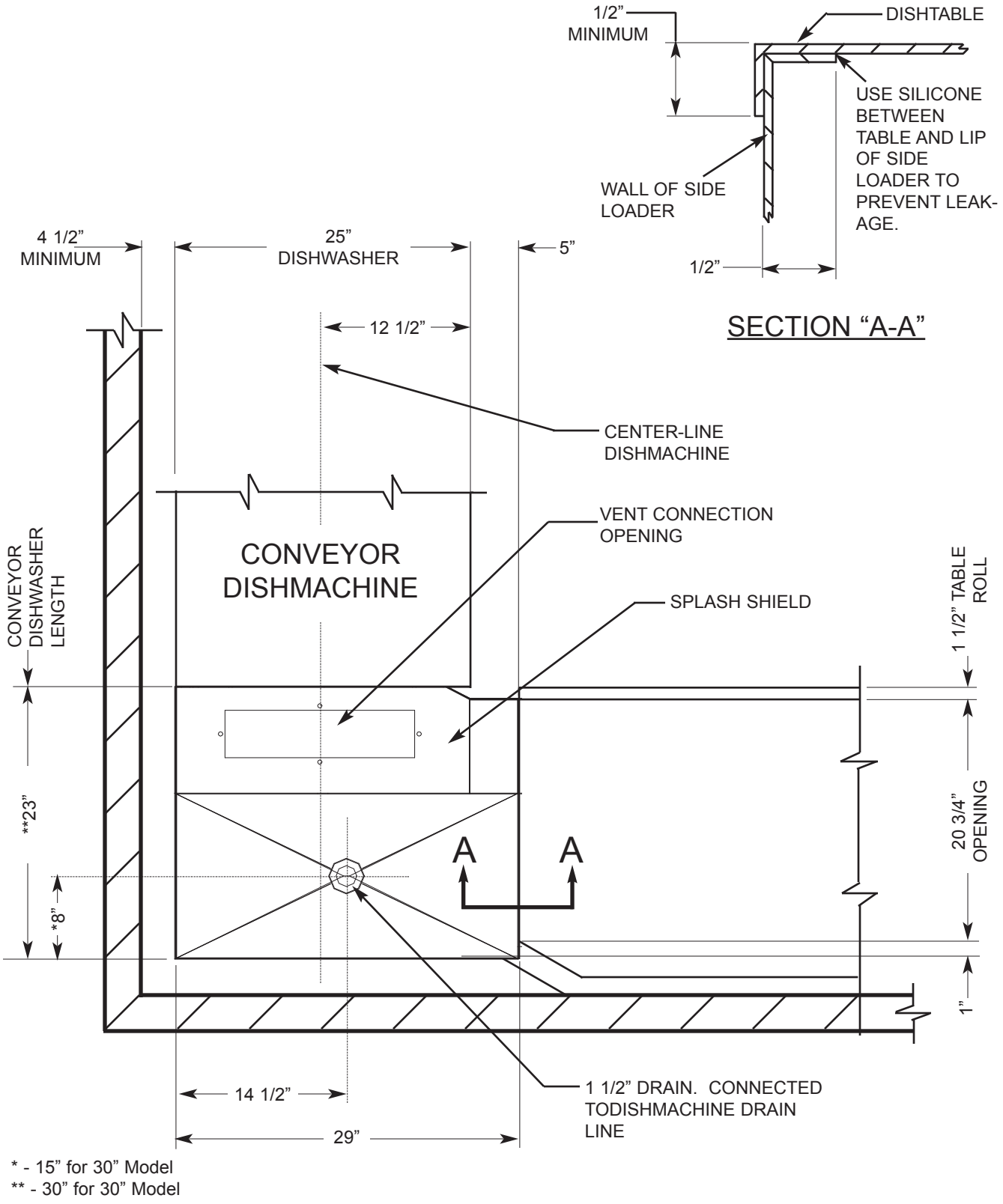
Right Side

AJ-100 STEAM - LEFT TO RIGHT



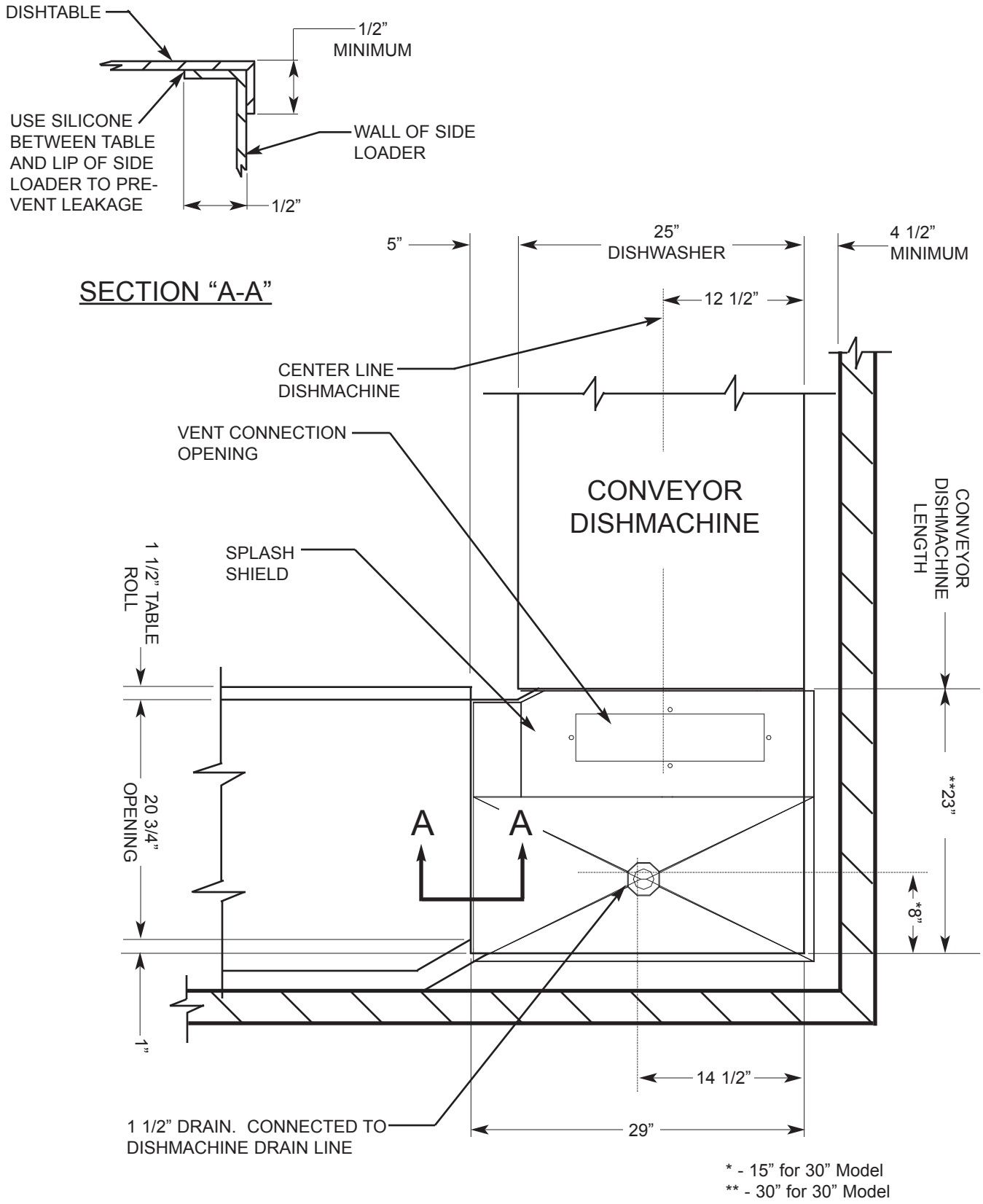

Right to Left
Legend
A - Machine water inlet 3/4" NPT 180°F
Hi-temp.140°F Low-temp minimum
B - Electrical connection
C - Drain connection 1-1/2" NPT
D - Vent collar - Optional
E - Vent cowl standard
F - 3/4" NPT Steam connection
G - 3/4" NPT Condensate return
H - Steam electrical connection
J - 1" NPT Steam connection
K - 3/4" Condensate connection
L - 3/4" NPT Incoming 110°F water connection
M - 3/4" NPT 180°F water to dishmachine.
N - Prewash water inlet 3/4" NPT 110°F-140°F
O - Cold water thermostat plumbing connection 3/4" NPT - Optional
Note: All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.
Recommended Table Fabrication
Rack Rail
Table
Use Silicone Sealer Between Table and Lip of Machine to Prevent Leakage
Tub
Rack Rail Height Above Dishtable 1/4" [6mm] - 5/16" [8mm]
Note: Tub Will Accept a Table Flange Up to 24 7/8" [632 mm]
3/4" [19 mm] Table Turndown Flange 3/4" Max
21" [533 mm]
Prewash Plan View Section with Cold Water Thermostat
Floor Sink Or Drain With 3" (76 mm) Minimum Drain Line
64 [1626mm] Base Unit
100 [2540mm] Table to Table
108 [2743mm]
118 [2997mm] Overall
36 [914mm] Prewash
8 [204mm]
21 [535mm]
25 [637mm]
38 [966mm]
Left Side
Right Side
Front View
Drive Unit
Rear of Machine
25 [635mm] Dish Clearance
34 [864mm]
84 [2134mm] With Doors Open
75½ [1919mm]
67¼ [1707mm]

SIDE LOADER (LEFT TO RIGHT) DIMENSIONS



* - 15" for 30" Model
** - 30" for 30" Model

SIDE LOADER (RIGHT TO LEFT) DIMENSIONS



* - 15" for 30" Model
** - 30" for 30" Model

SIDE LOADER INSTALLATION DIMENSIONS

23” SIDE LOADER DIMENSIONS

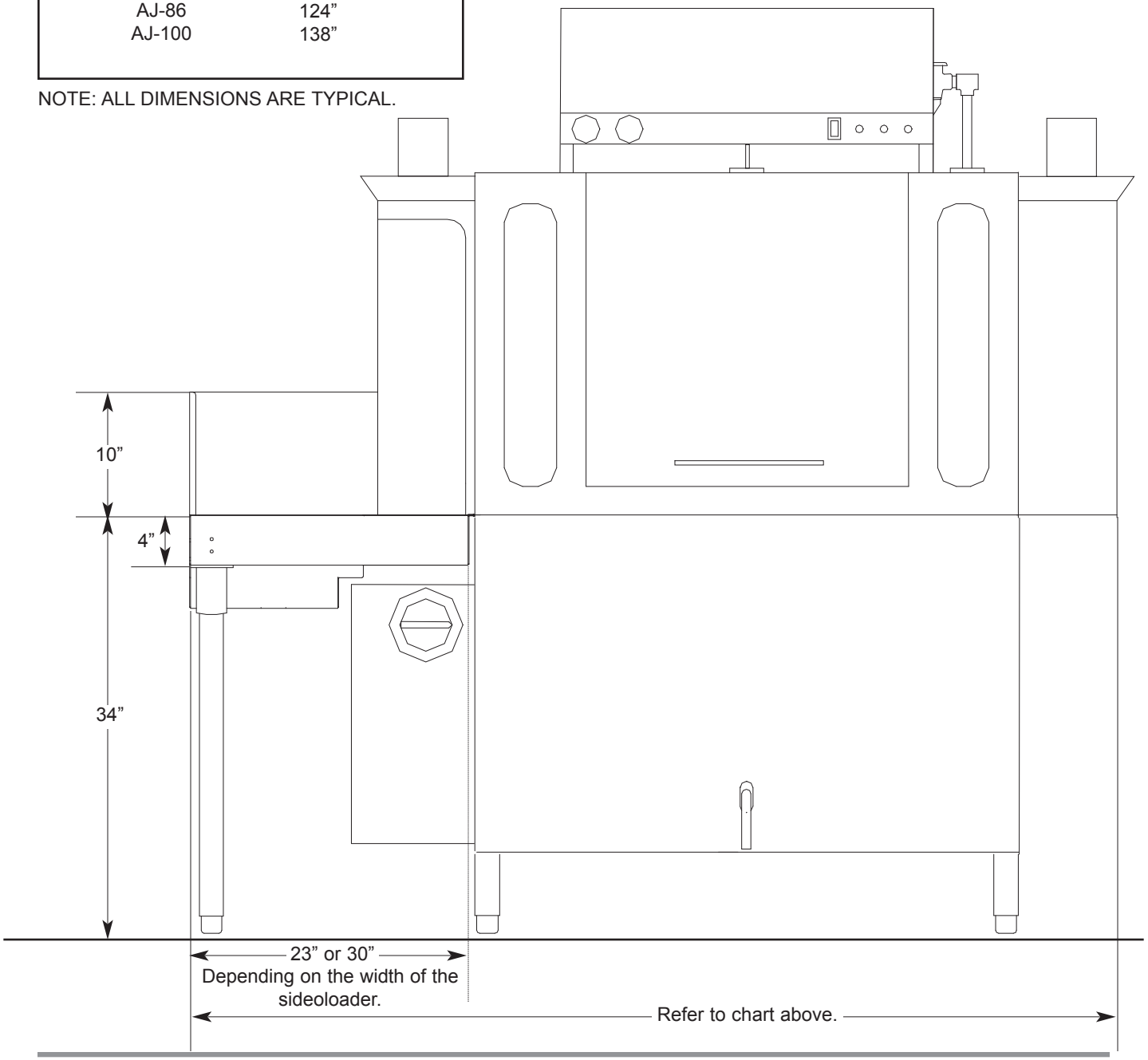
MODEL	DIMENSIONS
AJ-64	95”
AJ-86	117”
AJ-100	131”

30” SIDE LOADER DIMENSIONS

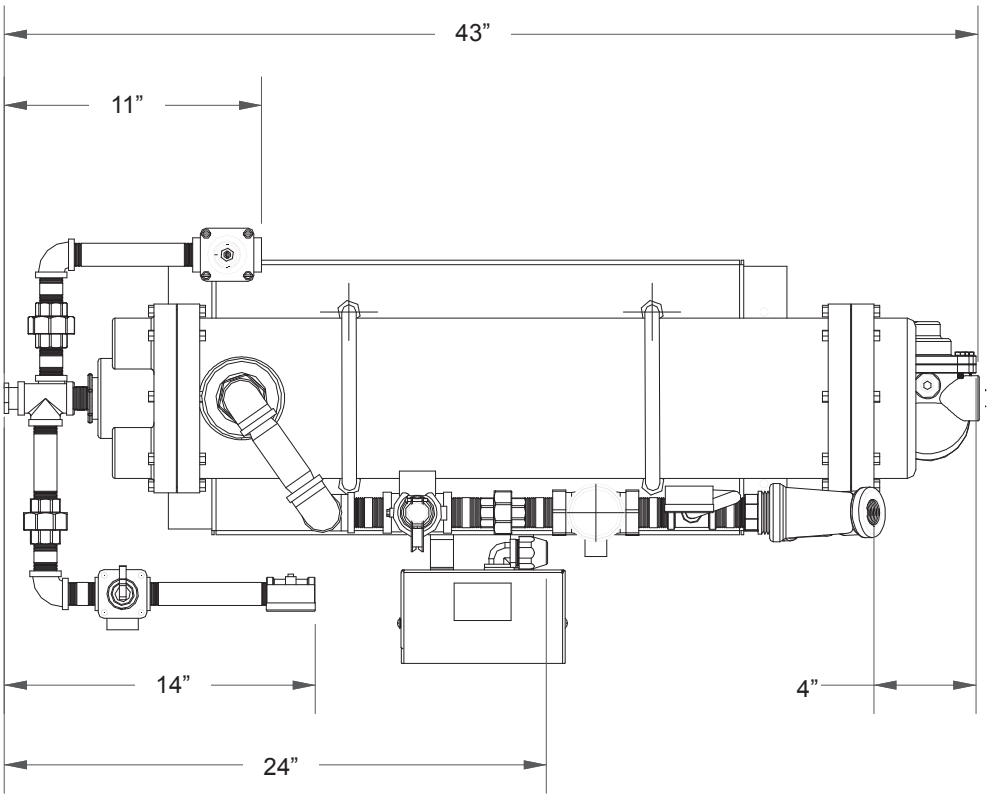
MODEL	DIMENSIONS
AJ-64	102”
AJ-86	124”
AJ-100	138”

NOTE: ALL DIMENSIONS ARE TYPICAL.

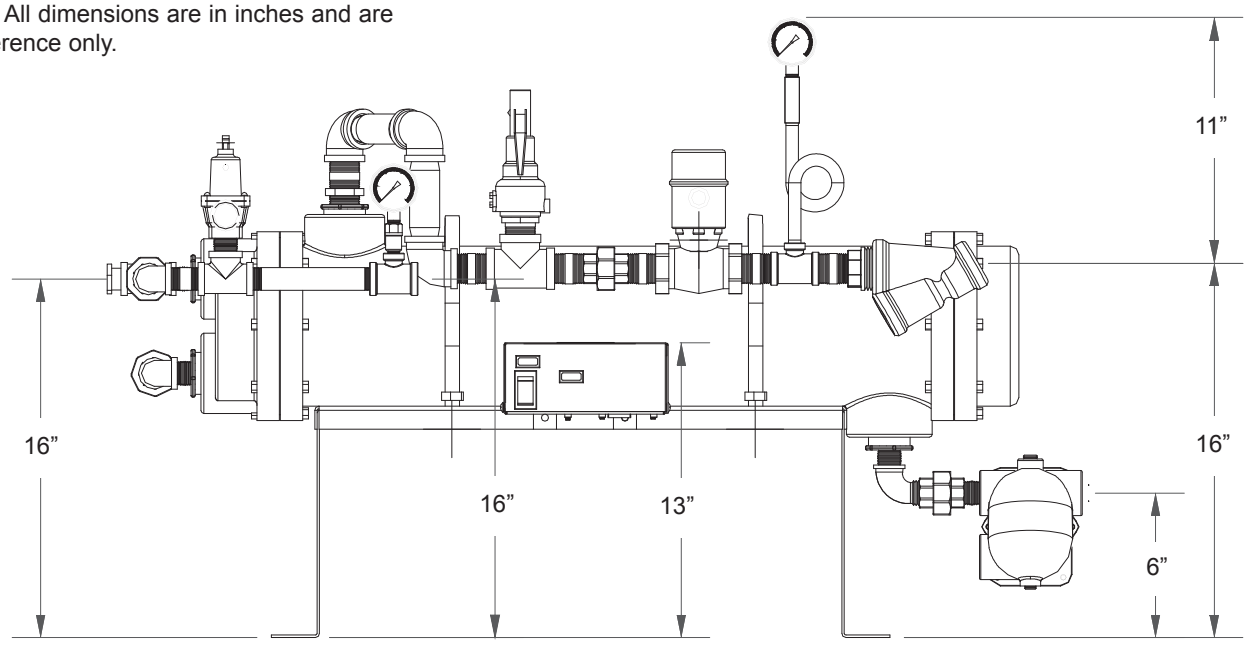
(Left to Right installation shown for reference.)



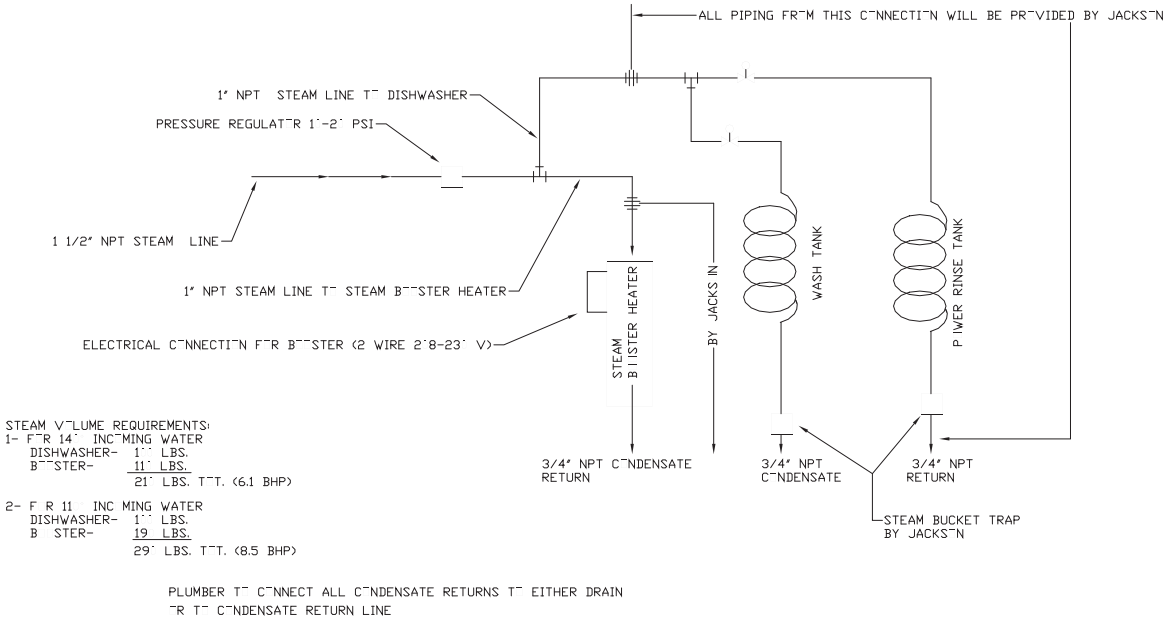
D226 STEAM BOOSTER DIMENSIONS



NOTE: All dimensions are in inches and are for reference only.



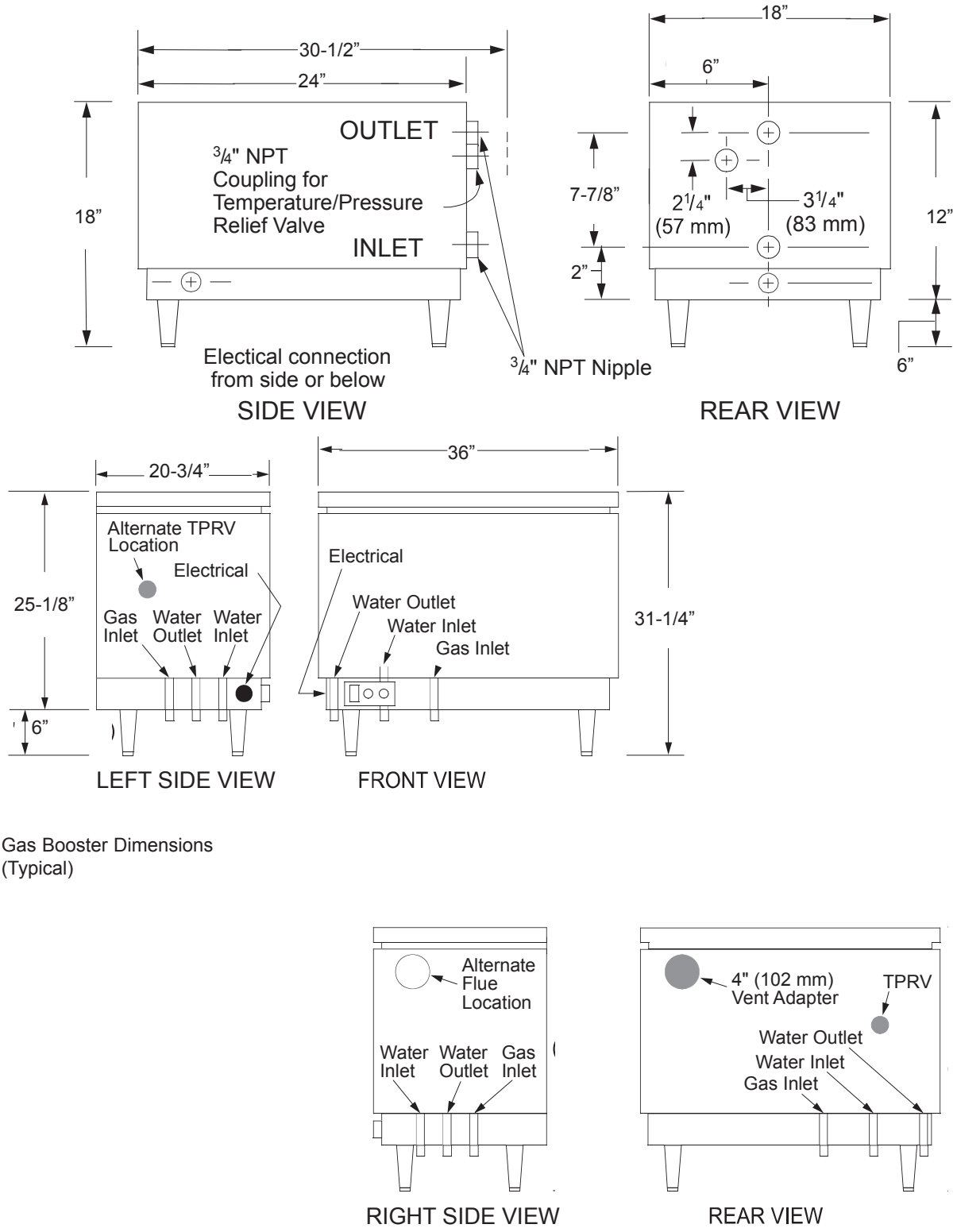
D226 STEAM BOOSTER PLUMBING LINE DRAWINGS


ALL PIPING FR M THIS C NNECTI N WILL BE PR VIDED BY JACKS N
1" NPT STEAM LINE T DISHWASHER
PRESSURE REGULAT R 1 -2 PSI
1 1/2" NPT STEAM LINE
1" NPT STEAM LINE T STEAM B STER HEATER
ELECTRICAL C NNECTI N F R B STER (2 WIRE 2 8-23 V)
STEAM B I STER HEATER
BY JACKS IN
WASH TANK
P IWER RINSE TANK
3/4" NPT C NDENSATE RETURN
3/4" NPT C NDENSATE
3/4" NPT RETURN
STEAM BUCKET TRAP BY JACKS N
STEAM V LUME REQUIREMENTS:
1- F R 14 INC MING WATER
DISHWASHER- 1 LBS.
B STER- 11 LBS.
21 LBS. T T. (6.1 BHP)
2- F R 11 INC MING WATER
DISHWASHER- 1 LBS.
B STER- 19 LBS.
29 LBS. T T. (8.5 BHP)
PLUMBER T C NNECT ALL C NDENSATE RETURNS T EITHER DRAIN R T C NDENSATE RETURN LINE

Steam Booster Piping - Double Tank Machine

TYPICAL ELECTRIC AND GAS BOOSTER DIMENSIONS

Electric Booster Dimensions (Typical)



Gas Booster Dimensions
(Typical)

SECTION 2:
INSTALLATION/OPERATION INSTRUCTIONS

SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

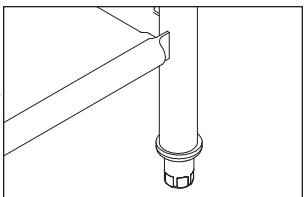
INSTALLATION INSTRUCTIONS

NOTE: THE INSTRUCTIONS PROVIDED HEREIN, UNLESS OTHERWISE SPECIFIED ARE FOR THE DISHMACHINES ONLY. THERE ARE SEPARATE DIRECTIONS FOR THE GAS BOOSTER.

VISUAL INSPECTION: Before installing the unit, check the container and machine for damage. A damaged container is an indicator that there may be some damage to the machine. If there is damage to both the container and machine, do not throw away the container. The dishmachine has been inspected and packed at the factory and is expected to arrive to you in new, undamaged condition. However, rough handling by carriers or others may result in damage to the unit while in transit. If such a situation occurs, do not return the unit to Jackson; instead, contact the carrier and ask them to send a representative to the site to inspect the damage to the unit and to complete an inspection report. You must contact the carrier within 48 hours of receiving the machine. Also, contact the dealer through which you purchased the unit.

UNPACKING THE DISHMACHINE: The machine should be unboxed and removed from shipping pallet prior to being installed. Open the front door and remove all of the packing materials. Once unpacked, ensure that there are no missing parts from the machine. This may not be obvious at first. If it is discovered that an item is missing, contact Jackson immediately.

LEVEL THE DISHMACHINE: The dishmachine is designed to operate while being level. This is important to prevent any damage to the machine during operation and to ensure the best results when washing ware. The unit comes with adjustable bullet feet, which can be turned using a pair of channel locks or by hand if the unit can be raised safely. Ensure that the unit is level from side to side and from front to back before making any connections. You will be able to adjust the overall height of the unit by turning the bullet feet from between 75-1/2” to 76-1/2”.

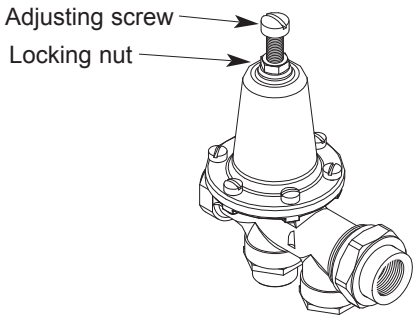


Frame with Adjustable Foot

PLUMBING THE DISHMACHINE: All plumbing connections must comply with all applicable local, state, and national plumbing codes. The plumber is responsible for ensuring that the incoming water line is thoroughly flushed prior to connecting it to any component of the dishmachine. It is necessary to remove all foreign debris from the water line that may potentially get trapped in the valves or cause an obstruction. Any valves that are fouled as a result of foreign matter left in the water line, and any expenses resulting from this fouling, are not the responsibility of the manufacturer.

Water hardness should be a maximum of 6 grains per gallon. Harder water should be treated prior to using the machine. Iron in the water supply can cause staining. A filter designed to remove iron from the supply water is highly recommended for supplies in excess of 0.1 ppm (parts per million).

CONNECTING THE DRAIN LINE: The drain for the models covered in this manual are gravity discharge drains. All piping from the machine to the drain must be a minimum 1 1/2” NPT and should not be reduced. There must also be an air gap between the machine drain line and the floor sink or drain. If a grease trap is required by code, it should have a flow capacity of 30 gallons per minute.



Incoming Plumbing Assembly

(Optional)

WATER SUPPLY CONNECTION: Ensure that you have read the section entitled “PLUMBING THE DISHMACHINE” above before proceeding. It is also recommended that a pressure regulator (not supplied) be installed in the incoming water line. The supply water temperature must meet the minimum requirements listed on the machine data plate. Install the water supply line (3/4” pipe size minimum) to the dishmachine line strainer. It is recommended that a water shut-off valve be installed in the water line between the main supply and the machine to allow access for service. The water supply line is to be capable of 25 PSI “flow” pressure at the recommended temperature indicated on the data plate.

If the water level is too low or too high, check the incoming water pressure. It should be 20 $\pm$ 5 PSI. Too high of pressure results in too much water; too low of pressure results in too little water. To adust the regulator, loosen the nut at the top, this will allow you to screw or unscrew the adjustment. With a screwdriver, turn the adjuster clockwise to increase pressure or counter clockwise to decrease it.

Do not confuse static pressure with flow pressure. Static pressure is the line pressure in a “no flow” condition (all valves and services are closed). Flow pressure is the pressure in the fill line when the fill valve is opened during the cycle.

It is also recommended that a shock absorber (not supplied) be installed in the incoming water line. This prevents line hammer (hydraulic shock), induced by the solenoid valve as it operates, from causing damage to the equipment.

STEAM LINE CONNECTIONS: Some machines covered in this manual are designed to use low pressure steam as a source of heat for wash tank water. The machines come with lines by which outside source steam needs to be connected. Connect all incoming steam lines in accordance with the steam booster manufacturer's instructions. Ensure that all applicable codes and regulations are adhered to. See machine data plate for information concerning steam flow pressure.

GAS CONNECTIONS: Some machines covered in this manual are designed to use gas as an outside source of heat for wash tank water. The machines come with connections by which an outside source needs to be connected. Connect all incoming gas lines in accordance with the gas booster manufacturer's instructions. Ensure that all applicable codes and regulations are adhered to.

PLUMBING CHECK: Slowly turn on the water supply to the machine after the incoming fill line and the drain line have been installed. Check for any leaks and repair as required. All leaks must be repaired prior to placing the machine in operation.

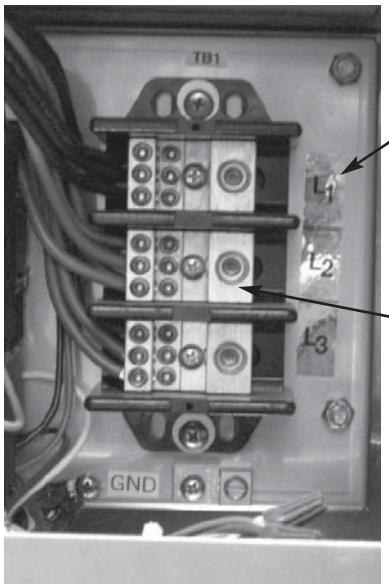
ELECTRICAL POWER CONNECTION: Electrical and grounding connections must comply with the applicable portions of the National Electrical Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

Disconnect electrical power supply and place a tag at the disconnect switch to indicate that you are working on the circuit.

The dishmachine data plate is located on the right side and to the front of the machine. Refer to the data plate for machine operating requirements, machine voltage, total amperage load and serial number.

To install the incoming power lines, open the control box. Install conduit into the pre-punched holes in the back of the control box. Route power wires and connect to power block and grounding lug. Install the service wires (L1, L2, and L3 (3 phase only)) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. Tighten the connections. It is recommended that "DE-OX" or another similar anti-oxidation agent be used on all power connections.

VOLTAGE CHECK: Ensure that the power switch is in the OFF position and apply power to the dishmachine. Check the incoming power at the terminal block and ensure it corresponds to the voltage listed on the data plate. If not, contact a qualified service agency to examine the problem. Do not run the dishmachine if the voltage is too high or too low. Shut off the service breaker and mark it as being for the dishmachine. Advise all proper personnel of any problems and of the location of the service breaker. Replace the control box cover and tighten down the screws.



Incoming Power Connection

VENTILATION OF DISHMACHINE: The dishmachine should be located with provisions for venting into an adequate exhaust hood or ventilation system. This is essential to permit efficient removal of the condensation exhaust. Ensure that the exhaust system is acceptable in accordance with all applicable codes and standards.

NOTE: Any damage that is caused by steam or moisture due to improper ventilation is NOT covered under the warranty.

This units covered in this manual have the following exhaust requirements:

Load End:	200 CFM
Unload End:	400 CFM

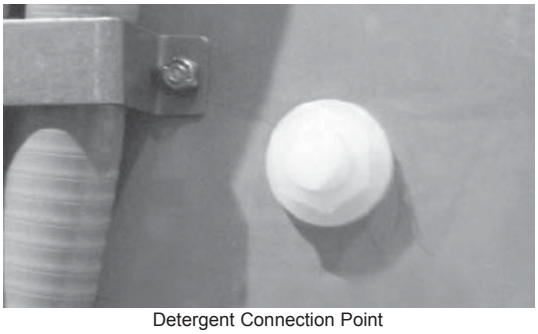
The exhaust system must be sized to handle this volume for the dishmachine to operate as it was designed to.

INSTALLATION INSTRUCTIONS (CONTINUED)

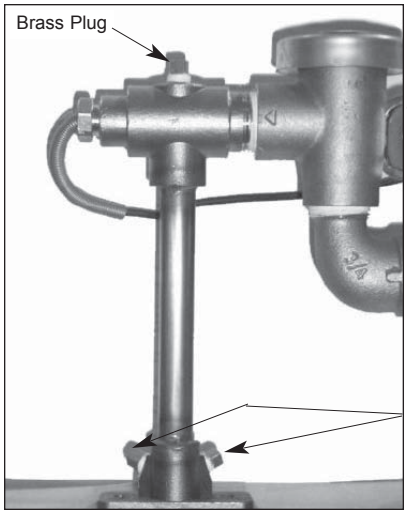
ELECTRIC HEAT: The thermostats for the machines covered in this manual are factory set. They should not be adjusted except by an authorized service agent.

CHEMICAL FEEDER EQUIPMENT: Detergent may be introduced into the unit through the removal of the bulkhead plug in the rear of the tub and replacing it with the third party detergent injection fitting. Remove the bulkhead plug in the side of the tub to install the detergent concentration probe.

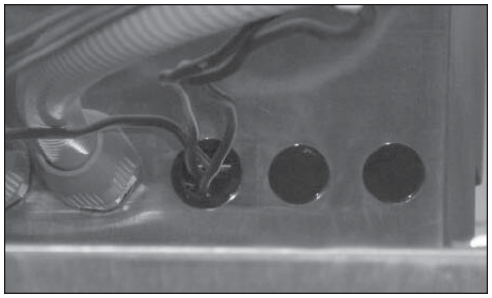
For more information concerning detergent concerns, please refer to the page entitled “Detergent Control”.



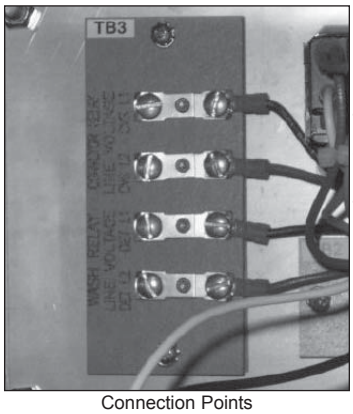
Detergent Connection Point
(Machine rear view)



The 1/8” brass plugs on the incoming plumbing rinse injector may be removed to install rinse aid injection fittings.



All wires for the chemical injectors should be routed through one of the extra openings in the back of the control box.



Connection Points

Terminals in the control box marked “CVS” provide a constant voltage signal whenever the drive motor is operating.

Terminals in the control box marked “DET” provide a voltage signal whenever the wash motor is operating.

DELIMING OPERATIONS

DELIMING OPERATIONS: In order to maintain the dishmachine at its optimum performance level, it will be required to remove lime and corrosion deposits on a frequent basis. A deliming solution should be available from your detergent supplier. Read and follow all instructions on the label of the deliming solution.

To proceed with the deliming operation, fill the dishmachine and add the correct amount of deliming solution as recommended by the deliming solution manufacturer. The water capacity of the various tanks of the dishmachine can be verified on the specification sheet(s) of this manual.

Perform the following operations to delime the dishmachine:

Delime Switch

1. Turn the AUTOMATIC/DELIME switch on the back of the control box to the DELIME position.

2. Disconnect or turn off all chemical feeder pumps.

3. Close all doors (after adding the deliming solution).

4. Run the machine for the recommended period of time.

5. Turn the unit off and open the doors.

6. Wait five minutes, then inspect the inside of the machine. If the machine is not delimed, run another time cycle as per the deliming solution's instructions.

7. When clean, drain and re-fill the machine.

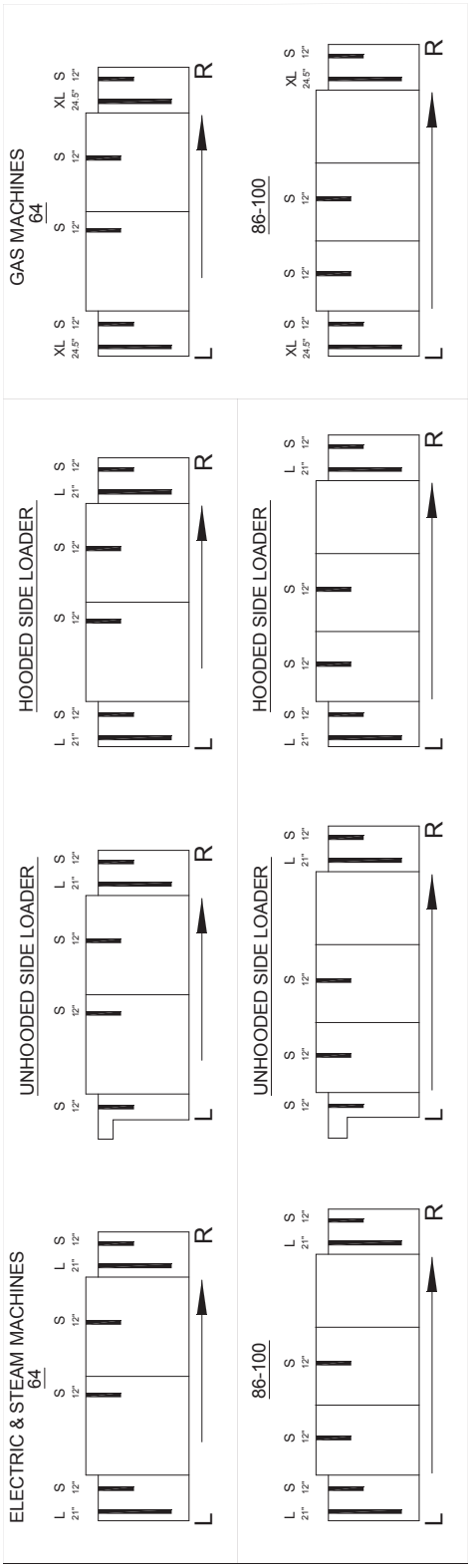
8. Run in MANUAL for 10 minutes to remove residual deliming solution.

9. Drain and re-fill the machine.

This equipment is not recommend for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials and components. Use of deionized water or other aggressive fluids will void the manufacturer's warranty.

CURTAIN INSTALLATION DIAGRAMS

Please refer to the chart for placement of the curtains.



SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

SIDE LOADER INSTALLATION & OPERATION INSTRUCTIONS

This accessory assists in the delivery of a full dish rack from the break down (scrapping) table to the dishmachine. It will convert the direction of travel 90°. Since the Side Loader is shipped mounted on the conveyor dishwasher there is no additional installation required for this option. As it is operated mechanically by the dishwasher it does not require any plumbing or electrical connections.

This Side Loader does not require or add any additional electrical or mechanical devices to the unit which could create operational or maintenance problems. As designed the drive mechanism is powered by the conveyor drive motor on the dishmachine. An extension on the pawl bar provides the drive to push the racks into the unit.

PREPARATION: Before proceeding with the start-up of the unit, verify that the Side Loader pan strainer is installed.

WARE PREPARATION: Proper preparation of ware will help ensure good results and less re-washes. If not done properly, ware may not come out clean and the efficiency of the dishmachine will be reduced. It is important to remember that a dishmachine is not a garbage disposal and that simply throwing unscraped dishes into the machine simply defeats the purpose altogether of washing the ware. Scraps should be removed from ware prior to being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside down in racks so that they do not hold water during the cycle. The dishmachine is meant not only to clean, but to sanitize as well, to destroy all of the bacteria that could be harmful to human beings. In order to do this, ware must be properly prepared prior to being placed in the machine.

WASHING A RACK OF WARE: Once a rack is fully loaded it should be positioned against the front of the dish table. The rack should then be moved into the Side Loader until it activates the actuator switch. Once the the machine is started, it should pull the rack through the machine and push it out the unload end. Once a rack has started through, you may put another rack in.

OPERATIONAL INSPECTION: Based upon usage, the pan strainer may become clogged with soil and debris as the workday progresses. Operators should regularly inspect the pan strainer to ensure it has not become clogged. If the strainer does become clogged, it will reduce the washing capability of the machine. Instruct operators to clean out the pan strainer at regular intervals or as required by work load.

SHUTDOWN AND CLEANING: At the end of the workday, remove the pan strainer and clean as required. Wipe out the inside of the Side Loader and then reinsert the strainer.

SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

D226 STEAM BOOSTER INSTALLATION & OPERATION INSTRUCTIONS

CONCEALED DAMAGE OR MISSING PARTS:

IMPORTANT: FOR YOUR PROTECTION, PLEASE READ AND OBSERVE THE FOLLOWING:

This steam booster has been thoroughly inspected and carefully packed before leaving our warehouse.

Concealed loss or damage means loss or damage which does not become apparent until the booster has been unpacked. The contents may be damaged in transit due to rough handling even though the carton may not show external damage.

If it is found that the shipment has concealed damage, PLEASE DO NOT RETURN IT TO JACKSON, but notify the carrier (within 48 hours) asking them to send their agent to fill out an inspection report. Save the cartons so he may inspect them and be sure to note in the report any black marks, creases, tears, crushed corners or any other marks indicating rough handling. Also, notify your JACKSON dealer immediately.

If it is discovered that there are missing parts, please notify your JACKSON dealer immediately.

EQUIPMENT MOUNTING:

Your booster should come pre-assembled and will require that it be permanently mounted in place. The platform has pre-punched holes to allow for mounting to the installation floor. **NOTE:** The D226 Booster must be properly mounted and level before being used. Once the platform is secure to the floor, attach the water and steam lines in accordance with local and national codes.

PLUMBING:

NOTE: ALL CONNECTIONS MUST COMPLY WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL PLUMBING CODES.

The plumber is responsible for ensuring that the water line is **THOROUGHLY FLUSHED BEFORE** connecting it to any manual or solenoid valve. It is necessary to remove all foreign matter such as chips (resulting from cutting or threading pipes), pipe joint compound or, if soldered fittings are used, bits of solder or cuttings from the lines. This debris, if not removed, may lodge in the valves and render them inoperative.

The D226 Booster is designed to take incoming water from a minimum temperature of 110°F to approximately 180°F for use in the final rinse of your Jackson dishmachine. In order to do this, water is supplied to the booster and is heated by tubes carrying 15-25 PSIG flow steam. Heat is transferred from the steam into the water, raising the temperature.

Install condensate drains in accordance with applicable codes.

The D226 Booster is designed to operate at a water flow rate of 20 ±5 PSI. The assembly comes with a water pressure regulator, which is preset at the factory. However, adjustment may be required so ensure that you verify the the flow pressure before beginning operations. See the instructions regarding adjustment and maintenance of the water pressure regulator for more information.

WARNING: The D226 Booster is designed to heat water to a minimum of 180°F and is extremely hot during operations. Advise personnel of the dangers associated with touching booster components as burns or severe injury can occur.

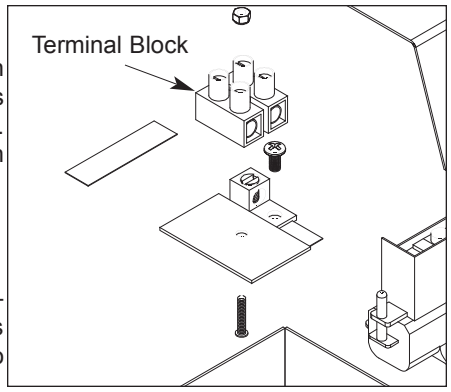
This equipment is not recommend for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials and components. Use of deionized water or other aggressive fluids will void the manufacturer's warranty.

D226 STEAM BOOSTER INSTALLATION & OPERATION INSTRUCTIONS (CONTINUED)

ELECTRICAL:

WARNING: Electrical and grounding connections must comply with applicable portions of the National Electrical Code ANSI / NFPA 70 (latest edition) and/or other electrical codes.Disconnect electrical power supply and place a tag or lock at the disconnect switch to indicate that you are working on the circuit.

To connect the incoming power, run the conduit for power wires through the open hole in the back of the control box. Connect the power wires to the terminal block as it is labeled (L1 and L2). Run the ground wire to the grounding lug marked “GND”. Tight connections and conduit nuts and close the control box by putting the cover on and securing with the 10-32 screws.



D226 Conrtol Box

OPERATION:

WARNING: The heat exchanger used in the D226 Booster system is a pressure vessel with very precise operating parameters. Safety equipment such as relief valves should never be tampered with or disabled. These devices are meant to protect the equipment and the operator from harm, damage and death.

1. Ensure that water, steam and any condensate drains are connected to the booster.
2. Start the water flow first, open the condensate drains and then begin steam flow.
3. On the control box, press the power switch and put it in the ON position. The power light should illuminate.

The unit should run normally now.

WARNING: Do not shock the system by applying the steam before the water. This can cause damage to the booster.

The following explanation describes the operation of the D226 Booster.

NOTE: This explanation assumes that water and steam have been connected to the machine.

1. When the power switch (S1) is placed in the ON position, power is provided to both the power light (E1) and the thermostat (TS1).
2. The thermostat (TS1) will close when the water falls below the minimum setpoint, energizing the steam solenoid light (E2) and the steam solenoid (FS1).
3. The steam solenoid (FS1) will remain open, allowing steam into the booster, until the water temperature reaches the desired temperature. At that point, the thermostat (TS1) will open, de-energizing the steam solenoid (FS1) and the steam solenoid light (E2).

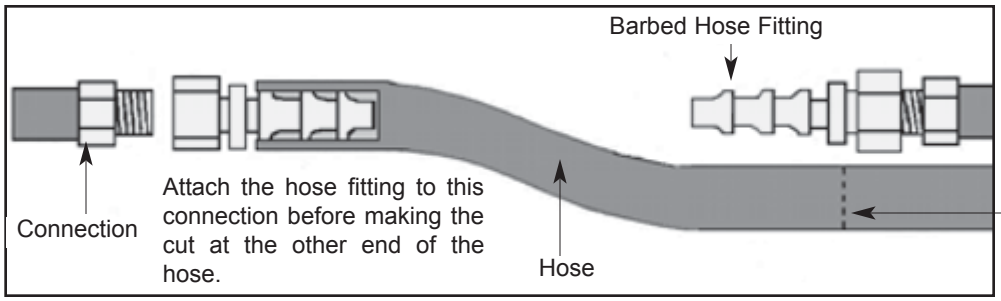
IMPORTANT: Please remember that all of the components in the control box are under line voltage (208-240 volts). Under no circumstance is the control box cover to be removed or opened during normal operations!

SHUTDOWN (FOR SERVICE ONLY):

WARNING: The D226 Booster is designed to heat water to a minimum of 180°F and is extremely hot during operations. Advise personnel of the dangers associated with touching booster components as burns or severe injury can occur.

1. Turn the power switch to the OFF position. The power light should extinguish.
2. Secure steam flow to the unit.
3. Secure water flow.
4. Close the condensate drains as required by procedure and/or code.
5. Do not attempt to clean, wipe down or perform any maintenance on the booster until it has been given a generous amount of time to cool down.

GAS CONVEYOR HOSE INSTALLATION


Barbed Hose Fitting
Connection
Attach the hose fitting to this connection before making the cut at the other end of the hose.
Hose
Cut the hose at the location where the hose is even with the yellow plastic stop.

Due to the fact that each customer may have different requirements for the orientation of the gas booster heater relative to the main dishmachine, the hose lengths that connect the two units must be customized during each installation. The appropriate 3/4” hosing, fittings and gaskets have been provided.

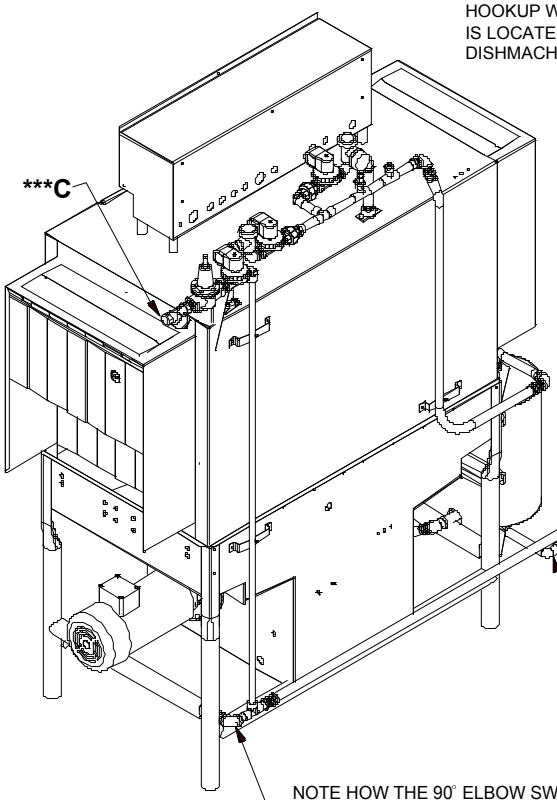
To prevent incorrect measurements of the hose, it is recommended to place one barbed hose fitting into the end of the uncut length of hose coil and attach that fitting to an appropriate connection. Run the hose to the corresponding connection on the other unit before cutting the hose. Use a barbed hose fitting that is screwed into the second connection on the other unit before cutting the hose. Use a barbed hose fitting that is screwed onto the second connection to gauge the correct distance. Ensure a smooth “flow” of hose without any sharp turns or kinks.

To aid in pushing the barbed hose fitting into the hose, place the fitting on a hard surface (i.e. the floor) with the barbed end of the fitting pointing upward and push the hose down onto the fitting. A small amount of lubricant (i.e. petroleum jelly) may aid in this process.

GAS CONVEYOR HOSE INSTALLATION (CONTINUED)

TYPICAL RECIRCULATING WATER HOOK-UP FOR ALL GAS HEATED CONVEYORS

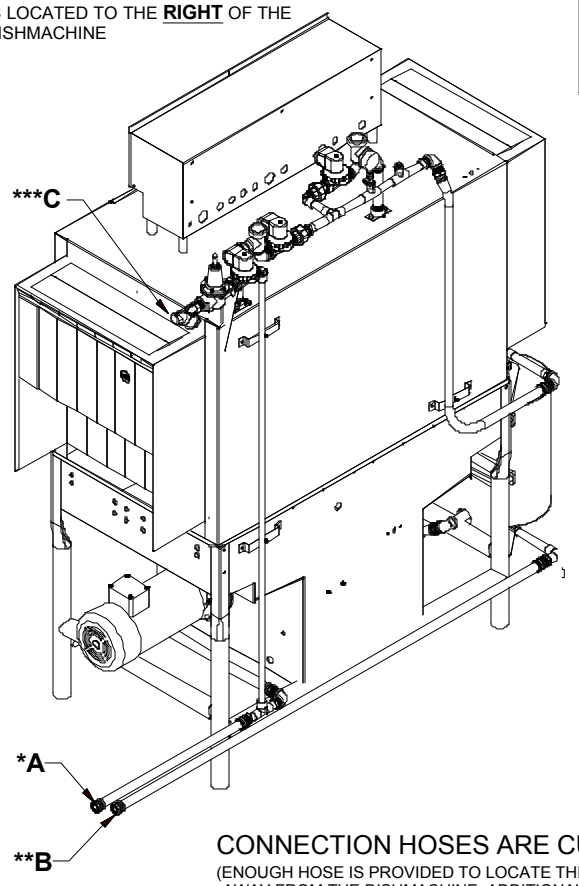
HOOKUP WHEN GAS BOOSTER HEATER IS LOCATED TO THE **LEFT** OF THE DISHMACHINE



THE RINSE TANK INLET PIPE IS ROTATED 180° TO ACCOMMODATE THE HOSE COMING FROM THE OPPOSITE DIRECTION

NOTE HOW THE 90° ELBOW SWITCHES TO THE OPPOSITE SIDE OF THE PIPING TEE TO ACCOMMODATE THE HOSE COMING FROM THE OPPOSITE DIRECTIONS

HOOKUP WHEN GAS BOOSTER HEATER IS LOCATED TO THE **RIGHT** OF THE DISHMACHINE



CONNECTION HOSES ARE CUT TO LENGTH DURING INSTALLATION.

(ENOUGH HOSE IS PROVIDED TO LOCATE THE GAS BOOTER HEATER APPROXIMATELY 9 FEET AWAY FROM THE DISHMACHINE. ADDITIONAL HOSE MUST BE ORDERED IF A GREATER DISTANCE IS REQUIRED. DISTANCES GREATER THAN 20 FEET AWAY CAN AFFECT THE HEATING PERFORMANCE OF THE UNIT)

* HOSES MARKED **A** IN THE ABOVE ILLUSTRATIONS CONNECT TO THE **INLET** WATER CONNECTION OF THE GAS BOOSTER HEATER

** HOSES MARKED **B** IN THE ABOVE ILLUSTRATIONS CONNECT TO THE **OUTLET** WATER CONNECTION OF THE GAS BOOSTER HEATER

*** ITEMS MARKED **C** ARE THE INCOMING PLUMBING CONNECTIONS TO MACHINE THAT SHOULD BE 110 - 140 DEGREES

SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

DISHMACHINE OPERATING INSTRUCTIONS

PREPARATION: Before proceeding with the start-up of the unit, verify the following:

1. Close door(s) on dishmachine.
2. Close the drain valve(s).

POWER UP (ELECTRICALLY-HEATED MODELS): To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage will have to be verified.

POWER UP (STEAM-HEATED MODELS): To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage will have to be verified. Ensure that the steam service is connected and that steam is flowing to the machine. Without steam, the water will not reach the required minimum temperatures that the machine is designed to operate at.

POWER UP (GAS-HEATED MODELS): To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage will have to be verified. Ensure that the gas service is connected and that gas is flowing to the machine. Without gas, the water will not reach the required minimum temperatures that the machine is designed to operate at.

FILLING THE WASH TUB: Ensure that the delime switch is in the NORMAL position, and place the power switch into the ON position. The machine should fill automatically and shut off when the appropriate level is reached (just below the pan strainer). The wash tub must be completely filled before operating the wash pump to prevent damage to the component. Once the wash tub is filled, the unit is ready for operation.

Machines equipped with prewash sections should not be run without water in those sections. This can cause damage to components.

WARE PREPARATION: Proper preparation of ware will help ensure good results and less re-washes. If not done properly, ware may not come out clean and the efficiency of the dishmachine will be reduced. It is important to remember that a dishmachine is not a garbage disposal and that simply throwing unscraped dishes into the machine simply defeats the purpose altogether of washing the ware. Scraps should be removed from ware prior to being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside down in racks so that they do not hold water during the cycle. The dishmachine is meant not only to clean, but to sanitize as well, to destroy all of the bacteria that could be harmful to human beings. In order to do this, ware must be properly prepared prior to being placed in the machine.

DAILY MACHINE PREPARATION: Refer to the section entitled “PREPARATION” at the top of this page and follow the instructions there. Afterwards, check that all of the chemical levels are correct and/or that there is plenty of detergent available for the expected workload.

WASHING A RACK OF WARE: To wash a rack, simply slide a rack of soiled ware into the load end of the machine. Once the the machine is started, it should pull the rack through the machine and push it out the unload end. Once a rack has started through, you may put another rack in.

OPERATIONAL INSPECTION: Based upon usage, the pan strainers may become clogged with soil and debris as the workday progresses. Operators should regularly inspect the pan strainers to ensure they have not become clogged. If the strainers do, they will reduce the washing capability of the machine. Instruct operators to clean out the pan strainers at regular intervals or as required by work load.

NOTE: On units equipped with prewash sections (AJ-86 and AJ-100), operators should also take the time to inspect the prewash section strainers and clean them as required by workload.

SHUTDOWN AND CLEANING (ELECTRICALLY-HEATED MODELS): At the end of the workday, place the power switch in the OFF position and open the door(s). Open the drain valves and allow the machine to drain completely. Remove the pawl bar assembly (clean as required). Remove the pan strainers and, if equipped, the prewash strainers, run off sheets and scrap basket strainer. Remove the wash and, if equipped, the prewash arms and verify that the nozzles and arms are free from obstructions. Flush the arms with fresh water. Remove the pump suction strainers and clean out as required. Remove the rinse tray assembly and clean. Remove the curtains and scrub with a mild detergent and warm water. Wipe out the inside of the unit and then reassemble with the components previously removed.

SHUTDOWN AND CLEANING (STEAM-HEATED MODELS): At the end of the workday, place the power switch in the OFF position, secure the flow of steam to the machine and open the door(s). Open the drain valves and allow the machine to drain completely. Remove the pawl bar assembly (clean as required). Remove the pan strainers and, if equipped, the prewash strainers, run off sheets and scrap basket strainer. Remove the wash and, if equipped, the prewash arms and verify that the nozzles and arms are free from obstructions. Flush the arms with fresh water. Remove the pump suction strainers and clean out as required. Remove the rinse tray assembly and clean. Remove the curtains and scrub with a mild detergent and warm water. Wipe out the inside of the unit and then reassemble with the components previously removed.

SHUTDOWN AND CLEANING (GAS-HEATED MODELS): At the end of the work day, shut down the gas booster in accordance with manufacturer's instructions. Place the power switch in the OFF position, secure the flow to the machine and open the door(s). Open the drain valves and allow the machine to drain completely. Remove the pawl bar assembly (clean as required). Remove the pan strainers and, if equipped, the prewash strainers, run off sheets and scrap basket strainer. Remove the wash and, if equipped, the prewash arms and verify that the nozzles and arms are free from obstructions. Flush the arms with fresh water. Remove the pump suction strainers and clean out as required. Remove the rinse tray assembly and clean. Remove the curtains and scrub with a mild detergent and warm water. Wipe out the inside of the unit and then reassemble with the components previously removed.

DETERGENT CONTROL

Detergent usage and water hardness are two factors that contribute greatly to how efficiently your dishmachine will operate. Using detergent in the proper amount can become, in time, a source of substantial savings. A qualified water treatment specialist can tell you what is needed for maximum efficiency from your detergent, but you should still know some basics so you'll understand what they are talking about.

First, you must understand that hard water greatly effects the performance of the dishmachine. Water hardness is the amount of dissolved calcium and magnesium in the water supply. The more dissolved solids in the water, the greater the water hardness. Hard water works against detergent, thereby causing the amount of detergent required for washing to increase. As you use more detergent, your costs for operating the dishmachine will increase and the results will decrease. The solids in hard water also may build-up as a scale on wash and rinse heaters, decreasing their ability to heat water. Water temperature is important in removing soil and sanitizing dishes. If the water cannot get hot enough, your results may not be satisfactory. This is why Jackson recommends that if you have installed the machine in an area with hard water, that you also install some type of water treatment equipment to help remove the dissolved solids from the water before it gets to the dishmachine.

Second, hard water may have you adding drying agents to your operating cycle to prevent spotting, when the real problem is deposited solids on your ware. As the water evaporates off of the ware, the solids will be left behind to form the spotting and no amount of drying agent will prevent this. Again, using treated water will undoubtedly reduce the occurrences of this problem.

Third, treated water may not be suitable for use in other areas of your operation. For instance, coffee made with soft water may have an acid or bitter flavor. It may only be feasible to install a small treatment unit for the water going into the dishmachine itself. Discuss this option with your qualified water treatment specialist.

Even after the water hardness problems have been solved, there still must be proper training of dishmachine operators in how much detergent is to be used per cycle. Talk with your water treatment specialist and detergent vendor and come up with a complete training program for operators. Using too much detergent has as detrimental effects as using too little. The proper amount of detergent must be used for job. It is important to remember that certain menu items may require extra detergent by their nature and personnel need to be made aware of this. Experience in using the dishmachine under a variety of conditions, along with good training in the operation of the machine, can go a long way in ensuring your dishmachine operates as efficiently as possible.

Certain dishmachine models require that chemicals be provided for proper operation and sanitization. Some models even require the installation of third-party chemical feeders to introduce those chemicals to the machine. Jackson does not recommend or endorse any brand name of chemicals or chemical dispensing equipment. Contact your local chemical distributor for questions concerning these subjects.

Some dishmachines come equipped with integral solid detergent dispensers. These dispensers are designed to accommodate detergents in a certain sized container. If you have such a unit, remember to explain this to your chemical distributor upon first contacting them.

As explained before, water temperature is an important factor in ensuring that your dishmachine functions properly. The data plate located on each unit details what the minimum temperatures must be for either the incoming water supply, the wash tank and the rinse tank, depending on what model of dishmachine you have installed. These temperatures may also be followed by temperatures that Jackson recommends to ensure the highest performance from you dishmachine. However, if the minimum requirements are not met, the chances are your dishes will not be clean or sanitized. Remember, a dish can look clean, but it may not be sanitized. Instruct your dishmachine operators to observe the required temperatures and to report when they fall below the minimum allowed. A loss of temperature can indicate a much larger problem such as a failed heater or it could also indicate that the hot water heater for your operation is not up to capacity and a larger one may need to be installed.

There are several factors to consider when installing your dishmachine to ensure that you get the best possible results from it and that it operates at peak efficiency for many years. Discuss your concerns with your local chemical distributor and water treatment specialist before there is a problem.

STRIKER PLATE LIMIT SWITCH INSTALLATION INSTRUCTIONS

Installation Instructions:

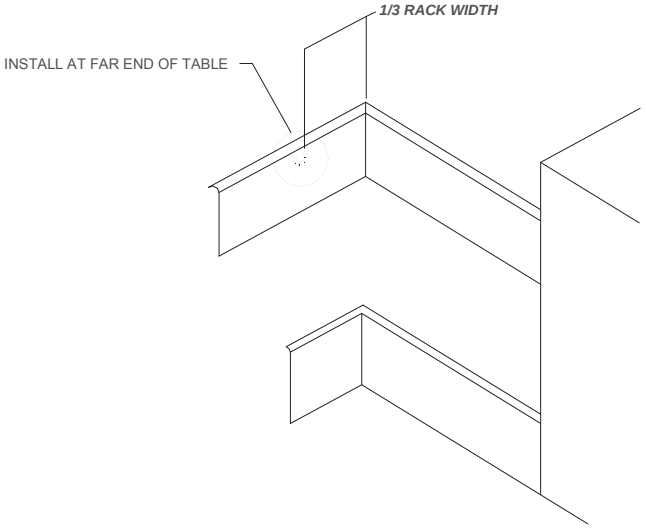
1. Wiring: The switch is wired common and normally open because of the hinge design. By interrupting the line in series with the door switches, the dishmachine ceases to operate. Refer to the machine schematic for details on how to wire the switch.

2. Parts of the table switch are mounted in the dishtable, at the end of the table and under the table. See the drawing(s) for the relationship of the switch to the table.

3. Move the limit switch as far down on the two slots as possible and see that the limit switch is straight on the base plate. This might require adjustment of the nut on the connector for the limit switch.

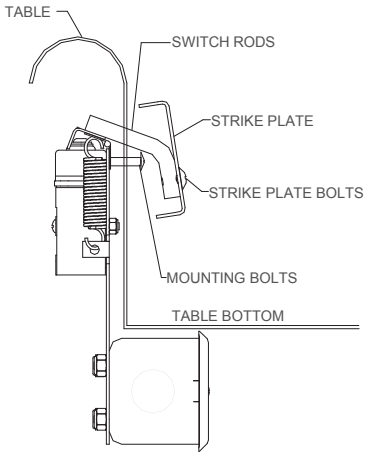
4. Then adjust the inside and the outside connector nuts for the connector box so that it lines up even with the limit switch and the base plate.

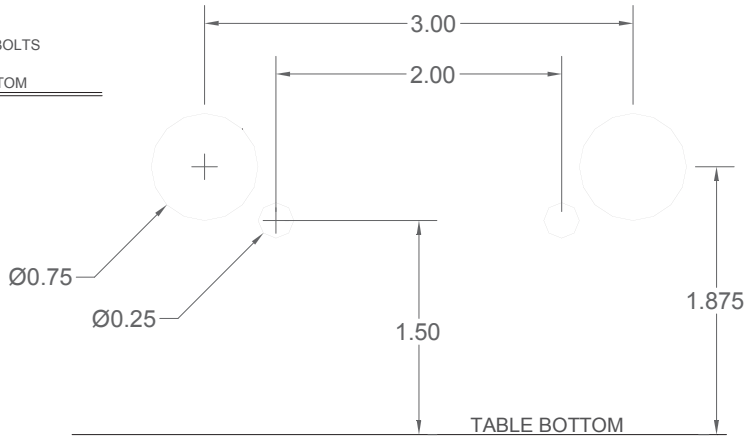
5. Tighten down the nuts for the seal so that they are tight.



6. If you have any difficulty you might have to adjust the connectors to the seal, screwing in or screwing out until the installation is straight on the table and the limit switch is actuated correctly by the rack.

TABLE LIMIT SWITCH THROUGH ROD HOLES





Unless noted, all dimensions are in inches.

SECTION 3:
PREVENTATIVE MAINTENANCE

SECTION 3: PREVENTATIVE MAINTENANCE

PREVENTATIVE MAINTENANCE

The dishmachines covered in this manual are designed to operate with a minimum of interaction with the operator. However, this does not mean that some items will not wear out in time. Jackson highly recommends that any maintenance and repairs not specifically discussed in this manual should be performed by QUALIFIED SERVICE PERSONNEL ONLY. Performing maintenance on your dishmachine may void your warranty if it is still in effect, so if you have a question or concern, do not hesitate to contact Jackson.

There are many things that operators can do to prevent catastrophic damage to the dishmachine. One of the major causes of component failure has to do with prescrapping procedures. A dishmachine is not a garbage disposal; any large pieces of material that are put into the machine shall remain in the machine until they are either broken up (after spreading out on your ware!) or physically removed. Strainers are installed to help catch debris, but they do no good of they are clogged. Have operators regularly inspect the pan strainers to ensure (1) that they are free of soil and debris and (2) they are laying flat in the tub.

When cleaning out strainers, do NOT beat them on waste cans. The strainers are made of metal and can be forgiving; but once severe damage is done, it is next to impossible for the strainer to work in the way it was designed to. Wipe out strainers with a rag and rinse under a faucet if necessary. For stubborn debris, a toothpick should be able to dislodge any obstructions from the perforations. Always ensure that strainers are placed back in the machine before operation and that they lay flat in the tub.

You may wish to also refer to the page entitled “Detergent Control” in order to learn more about how your water hardness will effect the performance of your machine. Hard water makes dishmachines work harder and decreases efficiency.

Again, it is important to remind operators that trying to perform corrective maintenance on the dishmachine could lead to larger problems or even cause harm to the operator. If a problem is discovered; secure the dishmachine using proper shut down procedures as listed in this manual and contact Jackson.

Some problems, however, may having nothing to do with the machine itself and no amount of preventative maintanence is going to help. A common problem has to do with temperatures being too low. Verify that the water temperatures coming to your dishmachine match the requirements listed on the machine data plate. There can be a variety of reasons why your water temperature could be too low and you should discuss it with Jackson to determine what can be done.

By following the operating and cleaning instructions in this manual, you should get the most efficient results from your machine. As a reminder, here are some steps to take to ensure that you are using the dishmachine the way it was designed to work:

1. Ensure that the water temperatures match those listed on the machine data plate.
2. Ensure that all strainers are in place before operating the machine.
3. Ensure that all wash and/or rinse arms are secure in the machine before operating.
4. Ensure that drains are closed/sealed before operating.
5. Remove as much soil from dishes by hand as possible before loading into racks.
6. Do not overfill racks.
7. Ensure that glasses are placed upside down in the rack.
8. Ensure that all chemicals being injected to machine have been verified as being at the correct concentrations.
9. Clean out the machine at the end of every workday as per the instructions in the manual.
10. Always contact Jackson whenever a serious problem arises.
11. Follow all safety procedures, whether listed in this manual or put forth by local, state or national codes/regulations.

SECTION 3: PREVENTATIVE MAINTENANCE

D226 MAINTENANCE

WARNING: Maintenance should only be performed by authorized service personnel in order to ensure safe and effective workmanship, while minimizing danger to operating personnel. The D226 Steam Booster is designed to operate at temperatures capable of causing burns to personnel. Always allow the unit to cool down to an acceptable temperature prior to performing any maintenance.

Very little maintenance is required to be performed on the D226 Booster. So long as the steam and water used with the unit have the proper filtration and are operated at the correct temperature and pressures, then you should expect many years of reliable service out of your system.

MAINTENANCE OF THE WATER PRESSURE REGULATOR:

Incoming water pressure can be regulated by adjusting the water pressure regulator on the system. In order to adjust pressure, loosen the top nut on the regulator. This will allow you to turn the adjusting screw. Turn the adjusting screw clockwise to increase pressure and counter-clockwise to decrease. Pressure can be read on the pressure gauge located on the water outlet side of the heat exchanger. Once the desired pressure is achieved, tighten the top nut to ensure that the adjustment cannot be accidently changed.

The water pressure regulator has an internal strainer that can be removed through the bottom hexagonal plug. This may need to be periodically checked depending on the water quality. It is important that the water supply to the water pressure regulator be secured prior to trying to clean the strainer.

MAINTENANCE OF THE RELIEF VALVES, SAFETY VALVES AND THERMOSTAT:

These components are shipped from the factory preset and should not be tampered with. None of these components are considered adjustable and no attempt should be made to do so. If a component does not appear to be working properly, then it should be replaced immediately by an authorized service representative.

SECTION 3: PREVENTATIVE MAINTENANCE

LUBRICATION CHART FOR DRIVE GEAR

Note: The maintenance procedures detailed here are manufacturer's instructions for the WINSMITH brand of gear reducer that is installed on the rack conveyors covered in this manual.

Ambient Temperature Final Stage Worm Speed[1] ISO Viscosity Grade AGMA Lubricant No.	-30 - 15°F up to 2000 FPM 220 5S	16 - 50°F up to 2000 FPM 460 #7 Compounded	51 - 95°F up to 450 FPM 680 #8 Compounded	51 - 95°F above 450 FPM 460 #7 Compounded	96 - 131°F up to 450 FPM 680 8S	96 - 131°F above 450 FPM 460[1] 7S
Mobil	SHC 630	600W Super Cylinder	Extra Hecla Super	600W Super Cylinder	SHC 636	SHC 634
American Lubricants	SHC-90W	AGMA #7 Gear Oil	AGMA #8 Gear Oil	AGMA #7 Gear Oil	N/A	N/A
Castrol	Tribol 800/220	Tribol 1105-7C	Tribol 1105-8C	Tribol 1105-7C	Tribol 800/680	Tribol 800/460
Chevron	Tegra 220	Cylinder Oil W460	Cylinder Oil W680	Cylinder Oil W460	Tegra 680	Tegra 460
Conoco	Syncon R & O 220	Inca Oil 460	Inca Oil 680	Inca Oil 460	N/A	Syncon R & O 460
Exxon (Esso)	Teresstic SHP220	Spartan EP 460	Spartan EP 680	Spartan EP 460	Teresstic SHP 680	Teresstic SHP 460
Fiske Brothers	SPO-MG	SPO-277	SPO-288	SPO-277	N/A	N/A
Shell	Omala RL 220	Valvata J 460	Valvata J 680	Valvata J 460	Omala RL 680	Omala RL 460
Texaco	Pinnacle 220	Vanguard 460	Vanguard 680	Vanguard 460	Pinnacle 680	Pinnacle 460

(1) The sliding velocity in feet per minute (FPM) for standard ratios is determined by multiplying the speed of the worm in RPM by the factor from the table below. For selecting proper lubricant, use the speed of the worm in the final stage (input RPM divided by the first stage ratio).

SECTION 3: PREVENTATIVE MAINTENANCE

DRIVE MOTOR GEAR REDUCER PREVENTATIVE MAINTENANCE

Note: The maintenance procedures detailed here are manufacturer's instructions for the WINSMITH brand of gear reducer that is installed on the rack conveyors covered in this manual.

Lubrication & Maintenance:

Factory filling - WINSMITH speed reducers are oil filled at the factory to the proper level for the standard mounting position that you will find it in on the unit. The oil level should be checked and adjusted (if necessary) prior to operation, using the oil level plug provided and while the unit is oriented in its operating position.

Ambient temperature - If the operating ambient temperature is other than 51 - 95°F, then refer to the lubrication chart and refill the unit with the correct grade based on actual ambient temperature and operating speed. See "Oil changing" below for additional information.

Oil changing - When changing the oil for any reason, it should be remembered that oils of various types may not be compatible. Therefore, when changing to a different oil, it is recommended that the housing be completely drained and thoroughly flushed with a light flushing oil prior to refilling with the appropriate lubricant. The oil level should be rechecked after a short period of operation and adjusted, if necessary. When changing double reduction models, each housing should be drained and filled independently, even though there may be a common level.

Initial oil change: The new oil in a speed reducer should be changed at the end of 250 hours of operation. This is equivalent to 30 days of peration for 8 hours per day; 15 days of operation for 16 hours per day, or 10 days of operation for 24 hours per day.

Subsequent oil changes: Under normal conditions, after the initial oil change, the oil should be changed after every 2500 hours of operation, or every 6 months, whichever occurs first. Under severe conditions (rapid temperature changes, moist, dirty or corrosive environment) it may be necessary to mchange oil at intervals of one to three months. Periodic examination of oil samples taken from the unit will help establish the appropriate interval.

Synthetic oils: Synthetic lubricants can be advantageous over mineral oils in that they generally are more stable, have a much longer life, and operate over a wider temperature range. These oils are appropriate for any application but are especially useful when units are subjected to low start-up temperatures or high operating temperatures. However, continuous operation above 225°F may cause damage to seals or other components. It is recommended that the initial oil be changed or filtered after the first 1500 hours of operation to remove metal particles that accumulate during break-in. Subsequent oil changes should be made after 5000 hours operation if units are operating in a clean environment. This can be extended to 10,000 hours if using new reformulated Mobil SHC lubricants (orange in color) and the lubricant remains free of contamination over this period. See comments under "Subsequent oil changes" for discussion of severe ambient conditions.

Long term storage or infrequent operation: If a speed reducer is to stand idle for an extended period of time, either prior to installation or during use, it is recommended that the unit be filled completely with oil to protect interior parts from rust and corrosion due to internal condensation. Be sure to drain the oil to the proper level before placing the speed reducer in service.

Grease fittings: Some units are equipped with grease fittings to lubricate bearings not adequately lubricated by the oil splash. These fittings must be lubricated every 3 - 6 months depending on operating conditions. bearing greases must be compatible with the type of gear lubricant being used (i.e. mineral, synthetic, food grade, etc.). For mineral oils, use a high quality lithium base NLGOI #2 bearing grease. For synthetic oils, use a synthetic bearing grease such as Mobil Synthetic Universal gease, Mobilith SHC 100 or a sutable equivalent. For food grade lubricants, use Chevron FM grease, NGLI 2, or equivalent.

Low input speeds (under 1600 RPM): When input speeds are less than 1600 RPM, grease fittings will be required to lubricate any bearings not partially covered by the normal oil level.

Oil temperature: Speed reducers in normal operation can generate temperatures up to 200°F depending on the type of reducer and the severity of the application 9loading, duration of service, ambient temperatures). Excessive oil temperatures may be the result of several factors including overloading, overfilling, underfilling or inadequate cooling.

	Nominal Ratio											
Size	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**80**	**100**
920	0.347	0.263	0.225	0.216	0.202	0.191	0.215	0.200	0.188	0.182	0.164	0.161

Lubricant selections are provided by the lubricant manufacturer based on AGMA recommeded viscosity grades. Viscosity grades are based on Lubrication Standard ANSI/AGMA 9005-D94.

SECTION 4:
TROUBLESHOOTING SECTION

SECTION 4: TROUBLESHOOTING

COMMON PROBLEMS

WARNING: Inspection, testing and repair of electrical equipment should be performed only by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. **Exercise extreme caution at all times.** If test points are not easily accessible, disconnect power, attach test equipment and reapply power to test. When replacing electrical parts, disconnect power at source circuit breaker.

Problem: Nothing on dishmachine operates. The power switch is ON and the power indicator light is OFF.

1. Machine is not wired correctly to incoming power source. Have an electrician verify wiring.
2. Machine circuit breaker is tripped. Reset the circuit breaker. If it trips again, contact an electrician to verify the machine amp draw.
3. Service breaker is tripped. Reset the service breaker. If it trips again, contact an electrician to verify the machine amp draw.

Problem: Machine will not fill. The power switch is ON and the power indicator light is ON.

1. No water supply to machine. Verify that water lines have been connected to the machine.
2. Dishmachine doors are not closed. Close doors completely.
3. Incoming water solenoid valve damaged/faulty. Verify that the valve is operating. If not, replace.
4. Tank floats faulty. Verify the wiring of the floats. Verify that no debris is jamming the floats. Replace if necessary.

Problem: Machine fills, but fill is weak.

1. Low incoming water pressure. Verify that incoming water pressure during fill is 20 ±5 PSI.
2. Incoming water solenoid is clogged. Verify that debris is not entrapped in valve. If so, remove debris.

Problem: Low wash tank temperature.

1. Low incoming water temperature. Verify that the incoming water temperature matches what is indicated on the machine data plate.
2. Heater not energizing. Verify that the wash tank heater is operating. If not, replace.
3. Low incoming voltage. Have an electrician verify that the power coming to the machine is the same as indicated on the data plate.

Problem: Low wash arm pressure, poor spray pattern.

1. Clogged wash arm nozzles. Verify that nozzles are not clogged with debris. If so, remove debris.
2. Clogged wash tank or wash pump strainers. Clean out strainers if necessary.
3. Worn wash pump impeller. Verify status of impeller, replace if necessary.

Problem: Low prewash arm pressure, poor spray pattern.

1. Clogged prewash arm nozzles. Verify that nozzles are not clogged with debris. If so, remove debris.
2. Clogged prewash tank or prewash pump strainers. Clean out strainers if necessary.
3. Worn prewash pump impeller. Verify status of impeller, replace if necessary.

Problem: Inadequate rinse.

1. Low incoming water pressure. Verify that incoming water pressure during fill is 20 ±5 PSI.
2. Incoming water solenoid is clogged. Verify that debris is not entrapped in valve. If so, remove debris.

Problem: Pawl bar moves with no load, but does not move when loaded.

1. Clutch on drive assembly is out of adjustment. Adjust as required.

SECTION 4: TROUBLESHOOTING

COMMON PROBLEMS

Problem: Pawl bar does not move.

1. Failed or broken overload spring. Replace spring if necessary.
2. No power to the drive motor/failed drive motor. Verify power and wiring connections to the motor. If necessary, replace the motor.
3. Pawl bar not properly installed. Verify that the pawl bar is installed correctly.

Problem: Racks go through the machine, but results are poor.

1. Verify that detergent is being dispensed into the machine at the appropriate quantities for the water volume. If not, get detergent to appropriate level and review results of washing ware.
2. Clogged strainers/scrap basket. Clean out strainers and scrap basket and replace.
3. Ware not being properly prescrapped. Review paragraph entitled “Ware Preparation” in Operating Instructions.
4. Wash or rinse arms missing end plugs or caps. Verify and replace as required.
5. Low tank heat.
6. Inadequate rinse.
7. Incorrect voltage coming to the machine. Verify that the voltage matches that on the machine data plate.
8. Wash pump cavitation due to low water level. Verify that the drains are shut and that the water level is correct.

Problem: Spotting of silverware, glasses and dishes.

1. Incorrect final rinse temperature. Verify that the rinse water temperature matches that which is listed on the machine data plate.
2. Clogged wash and/or rinse nozzles and arms. Remove the arms and verify that they and their nozzles are from debris.
3. Excessively hard water. Install a water softener to reduce hardness.
4. Loss of water pressure due to clogged/obstructed wash pump. Turn the power off to the machine at the source. Drain the wash tank of water and verify that the pump intake is free from debris.
5. Improper scrapping procedures. Review the paragraph entitled “Ware Preparation” in Operating Instructions.
6. incorrect detergent/chemcial concentrations. Verify that the detergent/chemical concentrations are correct for the associated water volume.

TORQUE SETTINGS

When replacing components either in the control box or the heater box area, the manufacturer has suggestions on how much to torque the screws and nuts used in securing items to the machine. Refer to the table below for the torque specifictions:

ITEMS	TORQUE SPEC
Relays	16 In/lbs
Heater Contactor	35 In/lbs
Heater Nuts	16 In/lbs
Terminal Block	50 In/lbs

SECTION 4: TROUBLESHOOTING

D226 TROUBLESHOOTING SECTION

WARNING: Inspection, testing and repair of electrical equipment should be performed only by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. **Exercise extreme caution at all times.** If test points are not easily accessible, disconnect power, attach test equipment and reapply power to test. When replacing electrical parts, disconnect power at source circuit breaker.

Problem: Power light does not illuminate.

1. Power not connected to the unit through the control box. Open the control box cover and verify that incoming power lines are connected and light.
2. Service breaker tripped or open. Verify that the breaker is closed.
3. Power switch connections could be loose. Ensure that the connections are of sound quality.
4. Power switch is faulty. Replace the power switch.
5. Power light is faulty. Replace the light.

Problem: Water pressure is too low.

1. Water pressure regulator is out of adjustment. Follow the instructions provided in the maintenance section and adjust so that the flow pressure is 20 ±5 PSI.
2. Water pressure regulator internal strainer is clogged. Clean in accordance with the instructions provided in the maintenance section.
3. Water pressure regulator is faulty. Replace the regulator.
4. Water pressure gauge is faulty or the cut off from the system. Verify that the test cock valve under the gauge is open to allow for the sensing of line pressure. Replace gauge if necessary.
5. Heat exchanger is clogged. Replace the heat exchanger.

Problem: Solenoid valve is not opening/shutting.

1. Power not connected to the unit through the control box. Open the control box cover and verify that incoming power lines are connected and light.
2. Service breaker tripped or open. Verify that the breaker is closed.
3. Power switch connections could be loose. Ensure that the connections are of sound quality.
4. Power switch is faulty. Replace the power switch.
5. Thermostat is faulty. Replace the thermostat.
6. Solenoid wires are loose or broken. Verify that the electrical connections are of sound quality.
7. Faulty solenoid coil. Replace the solenoid.

Problem: Outlet water temperature too low.

1. Power not connected to the unit through the control box. Open the control box cover and verify that incoming power lines are connected and light.
2. Service breaker tripped or open. Verify that the breaker is closed.
3. Power switch connections could be loose. Ensure that the connections are of sound quality.
4. Power switch is faulty. Replace the power switch.
5. Thermostat is faulty. Replace the thermostat.
6. Solenoid wires are loose or broken. Verify that the electrical connections are of sound quality.
7. Faulty solenoid coil. Replace the solenoid.
8. Steam flow pressure is too low for the unit. Verify that the steam flow is 15-25 PSIG.
9. Water flow pressure is too high. Follow the instructions provided in the maintenance section and adjust so that the flow pressure is 20 ±5 PSI.
10. Heat exchanger is clogged. Replace the heat exchanger.
11. Insufficient volume of steam to unit. Check the line size and flow pressure.